The Dental Digest.

Vol. XI. CHICAGO, FEBRUARY, 1905. No. 2.

Original Contributions.

DENTAL POVERTY.

BY G. S. JUNKERMAN, D.D.S., CINCINNATI. READ BEFORE THE NORTHERN OHIO DENTAL SOCIETY, JUNE, 1904.

The statements and deductions received from this paper are not to be used as evidence of the writer's low estimation of the practice of dentistry *as it should be,* but *as it is.* I do not expect this paper to be an agreeable one. Poverty rarely if ever is so. Lessons may be taught from the dark as well as the light side of life, and the general custom in dental societies has been somewhat deviated from in this document in that it refrains from public self-aggrandizement and the portrayal of professional class distinction, thoroughly convinced that the entire profession must live as an integer, or be buried in an unrecognized mass in the potter's field.

The dentist produces nothing and must therefore be classified as "genus spongia," his pabulum being the public or laity. The laity no doubt cannot understand how poverty and dentistry can be mentioned in the same train of thought, except in a retrovertive sense upon the patient who has been unfortunate enough to require and receive services from one of the exponents of the calling. By chance there may be some few dentists also who think they see an existing incongruity between the two subjects. For the existence of these conclusions in the mind of the laity, I will neither condemn it nor try to correct it, being satisfied that no good will accrue, until such time as the profession awakes to a full appreciation of the fact that poverty does stalk triumphant in its ranks. To those who cannot or will not see the existing condition it is needless to offer consolation. They are like the turtle, which when rapped with a stone protrudes its head and then withdraws it again to its shell in fancied

security, although the alarm may have been the forerunner of an avalanche or mountain slide that will crush out its life.

Not all the logic of Plato could persuade me to the conclusion that justice holds sway in the dental profession of to-day. Practitioners grow gray in the service, and those accredited by general consent with being at the head of their calling are dying from year to year. What has their harvest been? Their last moments will at least be free from worry over the late decree of the Supreme Court declaring constitutional the direct inheritance tax law. Is it possible that the inventory will be taken on the other side of the great divide? If there be any reward for these shining lights it will have to be a heavenly one, as examination of their wills usually reveals a plentiful lack of stocks, bonds, cash and realty. The estate may consist of a large stock of human gratitude, but I fear this ceases to be a tangible asset after the spark of life has gone out.

In our rational and lucid intervals we are unable to comprehend how anybody can follow a calling, especially dentistry, without at least the anticipation of a commensurate reward. We may love or should at least be contented with our occupation in life, but it is only congenial and pleasant to us as the remuneration derived therefrom permits us to satisfy the tastes that a professional gentleman should possess. It has been openly asserted in dental meetings that no thought of fee should be commingled with the operation. This does not accord with my views, and I will be honest enough to assert that no two thoughts can be more harmoniously blended than a beautiful operation and a beautiful fee. I love to think of them together, and the more munificent the fee appears the more beauty and inspiration I can throw into the operation.

Poverty exists in other forms than in the estates of deceased dental lights. In their living estates we find continual manifestations of it. Good dentists are men of refined and cultivated tastes. They must have books, pictures, fine furniture and fine houses. The uncultivated laborer has no taste or desire for such luxuries. This artistic taste and with it the desire must be coexistent with the artistic dentist. Have any of you lately purchased a Rembrandt or a Murillo? Do your incomes keep pace in a reasonable degree with your desires? There may be a few of the above-mentioned turtles who think they can answer these questions in the affirmative. Their restricted horizons, however, confined by their narrow shells, are

not sufficient evidence except by way of exceptions preponderant enough to prove the rule.

Poverty exists also in the appreciation shown by the public for dental services. There are only three things in life valued above all else. Life itself first, which is allegedly in the keeping of the physician; property conserved by the lawyer, and lastly the soul by the clergy. If such a condition existed that either of these three possessions would be lost coincidentally with the last tooth, there would not be enough dentists in the entire United States to supply the dental work required in the state of Ohio alone. Dental services may be of vital importance, and they may have some relation to life, property and immortality, but you have not yet convinced the public of the existence of such a condition, and so you are poverty-stricken in public appreciation.

Another line of poverty which we have in stock is that which pertains to our methods. We concede the fact that there are a great many very poor dentists in practice, but there would be many more so declared if they were weighed in the proper balance. The public is very indulgent even over those things which it does not appreciate, consequently many dentists pass as experts because they seem to have good general results from their operations. Patients may be vitally depleted and have great pain inflicted that results may be attained. The successful operation and the dead patient, however, have never appealed to me as evidence of good professionalism. Much of the dread and lack of appreciation and hatred toward dentists to-day exists from the following of such methods. You are poverty-stricken in this phase of dentistry unless you have a system of rapid and painless operations. Love and appreciation cannot be inspired by the protracted use or abuse of clamps, separators and rubber dam. The good dentist cannot be constituted of good results alone any more than the human body can be made of water entirely, although its chief constituent is that element. Good results procured by speedy, painless and comfortable operations are what make the true, scientific dentist.

Our literature is suffering from starvation. We are poor in system as portrayed by college text-books. It is almost impossible to find any two that agree on a certain method. System is the first principle of organization, and organization prohibits disintegration. Without systematized methods any professional calling sinks to one

of charlatanism. If our literature does not permit us to systematize the instructions to our college recruits, how can we expect the veterans who constitute our societies to maintain their positions under rigid fire. Our literature is better than it was some years ago, but good text-books are quite as scarce now as then.

From the above deductions, which you may mentally verify or disallow, we at least have arrived at the conclusion that dentistry is suffering from a lack of red corpuscles or an impoverished condition of the blood. This condition may be the result of a taint in the blood which prevents organization of new or healing of old tissue. The question that interests us most is, has dentistry an incurable disease? Does it occupy the strata that its constituents justify? You cannot change the spots of the leopard nor can you cut out and restore the specks in the decayed dental fruit.

One microbe can do more harm than a barrel of antiseptic can do good. I do not assert, I ask, is dentistry at its proper level? If any of you have discovered the secret of reconstruction I should like to know it. There is very little incentive for high-class men to enter the profession. High requirements and long curriculums will not entice high-grade men. High colors do not deceive the judge of good textures. Men who spend so much time, money and brain force in acquiring a calling will at least exact the promise of an opportunity for compensation sufficient to house their cultivation and refinement from public contempt. One disgrace to the profession can do more harm than a hundred of you can do good, and the standing of the profession is not what it should be to-day, being attractive neither to the good men it has nor to the good ones that it should have. The cause of this condition does not lie alone in one quarter, but the general impoverished condition of public appreciation, improper and incomplete operative and fee system, impoverished dental literature making a highly unattractive mass for high-minded, cultivated humanity.

The fee system, which so nearly concerns our salvation, is a subject of very delicate nature, and like all other subjects of importance has two sides. Professional men should be men of high ideals, and it requires money to maintain these ideals. If you can fill the profession with men whose requirements are great it might seem to open the gates to the securing of high fees by the profession. On the other hand, if men enter the profession whose ideals are low, and

who require little to supply their wants, the fees will be correspondingly low. No better example of this exists than the Chinese exclusion act in our own country, which was thought of enough importance to be enacted by our national legislative bodies in order to protect the American laborer. The Chinese coolies, who can live like rats, would otherwise have driven to starvation our laboring men, who are the bone and sinew of this great country. Wages have remained good and our people have been able to raise and educate their families to good citizenship and good womanhood and manhood. The other side of the question is quite as important. All classes and conditions are subject to the requirement of dental services, and the poorer ones find themselves unable to pay fees commensurate with the work rendered. These people are quite as important to a stable government as the higher orders, and their wants must be supplied. In law and medicine the requirements of these respective professions are supplied to the poor by salaried exponents appointed by the city and municipal governments or their agents. The doctor for the poor and the lawyer for the undefended are matters of daily history in all cities of our country. Is this another proof of the lack of public appreciation for dental services? I presume that this crying need does not exist in dentistry, as no doubt you are well aware that even the poorest will find a dentist still poorer who is willing or forced to work for such a tithe as may be extracted from the purses of these indigents.

If I have misstated any facts in this paper, please do not blame me for them. If my glasses are not properly focused and I do not see right, I wish that you would all help me to adjust them. If you believe with me work with me, and then perhaps some day we will all be

> Like him who climbs with sturdy stride,
> Far up the mountain's troubled side,
> And then turns round to look below,
> At hardships past, and conquered woe:
> So hearts by troubles past grow strong,
> And courage take in suffered wrong,
> To work, and hope, then attain that rest
> In nature's home on sunlit crest.

DISCUSSION. *Dr. W. A. Price,* Cleveland: I have pleasure in discussing so valuable a paper. Now, what is an endowed dentist?

What is a successful dental practice, a successful life as a dentist? We are probably going to divide right here where we start in. If we are to agree with our esteemed essayist, that the fee and appreciation of the profession make the success, then what of the men who have made the greatest contributions to science, literature and the arts, that never made enough to pay for a week's board and never received an expression of appreciation during their lifetime, and yet stand out as glorious characters? We must take something else as a fundamental principle in successful life. Doctor Junkerman says there are three things in life wanted above everything else: life first, property second, and lastly the soul. Lastly, No! First, the soul. What are we here for if not the good we can do for others? If life is going to be a success in dental practice it is going to be a success only so far as it loses sight of self for others. If we are going to be altogether selfish we are going to be miserable. Why is it that we want the approval of the people for whom we work? It is simply a question of nature. A man naturally yearns for commendation. Now, then, do we get the commendation? We all as dentists have a personal experience as varied as the men who go into the profession. The essayist struck the key-note of the whole thing when he said, "good results secured by speedy, painless and comfortable operations are what make the scientific dentist," and he should have added, the appreciated dentist. If we are not going to be poverty-stricken we must give high value. When a man tells me that the public does not appreciate dentistry I simply say he does not know, for the public will express appreciation. A successful operation is only ideally successful when it is perfect from the standpoint of mechanical operation and free from pain to the patient.

Now, then, regarding the fee. Is the dental profession poverty-stricken for fee? I am afraid, as a profession, it is. The essayist very aptly states when he starts it that he does not want this paper to be taken as his low esteem of dentistry as it should be, but as it is, but as he carries out the paper he does not give the remedy but simply leaves us with the thought that good men will not enter the profession because there is no attraction for them. There is not a calling in the world that will give a man more pleasure in its practice, if he is full of the love of it, than the practice of dentistry, but if he is in it for the dollars he can make out of it he will always be poverty-stricken. The operator's heart has to go out in sympathy in a way

that it cannot do for dollars. I want to say again that there are men in this room whom I know get expressions of appreciation both in words and fees that do repay them to their satisfaction for the operations they have performed. At the same time the great masses are not giving that expression of appreciation, but they are architects of what they are building. I think the fee we get is about what we deserve. If we are not giving a very valuable service and appreciating it highly ourselves we are not going to ask a high fee, and if we do not think it is worth a good deal, certainly we cannot expect our patients to. The premises of the paper are wrong. There are four things to live for, not only life, property and the salvation of the soul, but next to the salvation of the soul, the good we can do.

Doctor ——*:* There are various reasons why the dental profession is not so much appreciated as the ministry and the law. It is the opinion of the people at large that the dental profession is only for making money and that it is not doing a charitable work at all. In the other two professions they must have the service whether they can pay or not, so it places the dental profession upon the foundation of a money-making scheme, but I think it could be remedied to a great extent. We are told in the paper that if the dental profession were appreciated as it should be all the dentists in the world could not do the work that is required in our own state. That simply implies that there is a large amount of dental service required that is not given, and people are suffering to that extent. The legal profession renders free service where it is necessary to the poor who cannot pay, and there are dispensaries, etc., that render medical services, but the expense must be borne by some means, and consequently people are called upon to make donations. It seems to me the same service could be offered by the dental profession to great advantage. I would suggest that the colleges should render these services and receive the money which is donated for the purpose, and thus give the opinion to the public that it is a charitable work. As it is now we cannot be said to be doing a charitable work, for we expect pay for all we do. I think this is a point at which we can improve, but it is not to be expected that young professions will have all the improvements that the others have.

Dr. C. R. Butler, Cleveland: One sentence of the paper which interested me most, the poverty part, I cannot quite appreciate, except that the need of service by the people of the state of Ohio cannot

be met by all the dentists in the United States. Why is it that there are so many who are going without service? If the work done by those who are in practice brought that kind of confidence and faith in the value of it that it should, there would not be enough dentists in two or three states to do what is needed in Ohio. So perhaps the poverty lies with us in not being as energetic and enthusiastic in the rendering of service as we should be, and as far as the remarks made about us by those newsmongers, they will do that anyway. All we have to do is to be careful not to talk shop too much. When we go out of our offices let us talk something else and know something else, then we will become known as men of science and art without talking shop all the while. There is a great deal to be observed whether you go into a library and read books and lectures of others; a great deal to be obtained by contact with the living around you. We should have a fund of information so we can ask intelligent questions, whether we can answer them or not.

THE "PERIDONTIUM" OR THE MEMBRANE WHICH HOLDS A TOOTH IN ITS SOCKET.

FROM A LECTURE UPON THE "PERIDENTAL MEMRBANE" GIVEN BY PROF. GEORGE W. CUPIT TO THE STUDENTS IN THE DENTAL DEPARTMENT OF THE MEDICO-CHIRURGICAL COLLEGE OF PHILADELPHIA.

The peridental membrane is formed from the mesoblastic layer of connective tissue and is resolved from a part of the tooth follicle or sac in which the tooth formation takes place. It is at first a soft cellular structure and its principal function is the formation of the true bone of the tooth or the cementum. This is the root-covering and the softest of the three portions of the calcareous matter of the tooth. The enamel is hardest; the dentin, while by far the largest part of the tooth, is much softer than the enamel, and the cementum is the softest; so the tooth is hardest upon its outer surface and softer as it approaches the deeper, or that to which is attached the peridental membrane and upon which it depends for its attachment to the jaw.

This membrane is very similar, anatomically and functionally, to the periosteum of the bones. It is a bone-forming and bone-nourishing membrane. As calcification or ossification takes place in the

developing tooth many of its cells are caught in the calcareous matter of the future cementum and are often completely ossified themselves. As the substance of the cementum produced by this membrane thickens and the cells, besides being caught within it, become more and more fibrous, we have a very strong attachment of these fibers in the substance and upon the surface of the root-covering or cementum, and by means of which the tooth is so firmly held in its position. The membrane ultimately becomes a ligament, as it changes from a bone-forming to a tooth-supporting one, and as the joint of a tooth in its socket is classed with the other joints of the body, so the peridental membrane is classed as a ligament, holding the tooth to its bony alveolar wall just as one bone is held to another in the joints of the body by its ligament.

The peridental membrane is much more important, however, than any ordinary ligament, because it is in its earlier stages a very delicate membrane, is very vascular, is continually undergoing changes, and from its function and position is easily injured, irritated and inflamed. It is a question, in fact, whether it is not rather more important in its relation to the tooth than the very pulp itself. It has been said that it is, next to the pulp, most prolific of toothache. It is also a question whether it is not even more so than the pulp. One thing we may be sure of, and that is, that *many more teeth are lost from disease of the peridental membrane than from any other cause, if not from all other causes combined.* So it behooves us as dentists to give this most important organ all the consideration possible. It is the office of every dentist to preserve and retain all of the natural teeth possible. If, then, so many teeth owe their loss to disease of the peridental membrane, the dentist who would do most towards saving the natural teeth must give very largely of his time and study to the consideration of this organ and its environment; its anatomy, histology, function and nutrition; to the causes, symptoms, conditions and treatment of its diseases.

Let us consider the nature of some of the tendencies which induce disease in this all-important organ and from which so many teeth are lost. If in the first place we notice how near to the margin of the gums this peridental membrane is placed, lying upon the tooth-root, immediately under the free margin of the gum-tissue, and extending along the entire length of the root of the tooth to the apical end, we see how easily injuries to the gum, by biting too-hard

substances and allowing food particles to rest upon the gum margin and about the necks of the teeth, will induce inflammation not only of the gums, but also in its direct relation to the gums of the peridental membrane. Anything which induces inflammation or congestion of the gums will endanger the more important peridental membrane. Being deeper seated and not so readily affected by remedies for the treatment of diseased conditions, this membrane does not respond so readily to medication. It is also more prone to infection in an inflammatory condition and is not so easily sterilized as if placed upon an open surface and where antiseptic mouth-washes and sprays may directly reach the area of infection.

In all cases of congestion and the later stages of inflammation there is sure to be some degeneration of the accumulated blood as well as of the tissues lying near—gum and peridental tissue, alveolar structure of bone, etc., involving all of the parts in the environment of the teeth. One of the forms of degeneration of the blood and tissues lying about and upon the roots of the teeth, in the gums, bony process about the teeth, and in the organ of their attachment, the peridental membrane, is that of calcareous degeneration and deposit of the hard lime salts. These in turn become sources of irritation in the tissues, and with a gouty diathesis or inherited tendency to gout or rheumatism the salts deposited are the urates of lime and soda (accumulations of waste products of the system due to altered function of the excretory organs, the kidneys, skin, etc.), and act as literal poisons where the accumulations and infective inflammation occur. These areas of infective inflammation and degeneration are injurious, not only because the teeth and the adjacent parts are affected, but because they lead to many forms of systemic derangement and organic troubles—because the products of decomposition, from the simple active form of inflammation with acid reaction of the exudates to the complete destruction of tissue with the formation of pus, swarming with bacteria and poisonous ptomaines, because these products are mixed with and contaminate all the food that is masticated in mouths so affected, and as a source of nutrition the food is literally poisoned by these elements. How is a system to be nourished under these conditions? Is it any wonder that stomach, liver and intestinal troubles arise when these organs must depend for their well-being and functional activity upon food thus contaminated? The wonder is that there do not occur

many more serious organic diseases from infection arising from these mouth conditions.

It is not infrequent to find mouths, otherwise clean to all intents and purposes, with a form of chronic infective inflammation deep-seated, often with pus oozing from about the necks of the teeth, with receding gums, denudation of the tooth-root, and atrophy of the alveolar process, causing sooner or later a decided loosening of the teeth and their final loss from a breaking up of the attachment to the jaws. This is the way in which a great majority of all teeth are lost.

There is more than the loss of the teeth so affected, which is in itself a matter of serious consideration, especially for us. As more than mere tooth-tinkers, we must see farther than the mouth, and with this as a cause for more general disorder recognize systemic disturbances. We must see the results of acidity in the mouth; of throat affections, tonsilitis and catarrhal conditions, both infective and infected; of gastritis; intestinal indigestion, and most important of all, a general anemia. This occurs especially in children, and in many cases arises from the circulation of decayed and waste matter from the mouth, with its decaying teeth and inflammatory conditions incident to the change from temporary to permanent teeth, and its blood-destroying elements. The blood becomes impoverished by the destructive effects upon the red blood corpuscles of these poisons in the circulation and the absorption of its limited supply of oxygen.

The blood depends for its oxygen-carrying power upon the number of its red blood corpuscles. Normal blood is slightly alkaline in reaction. When from any cause there is irritation, and this is largely due in the blood stream to the presence of bacteria, with a destruction of blood corpuscles and a loss of functional activity in the red blood corpuscle and a consequent loss of oxygen, the blood becomes more acid and thus loses its oxygen-carrying power, and with the loss of oxygen there is also a loss of cell functional activity, slight acidity, a consequent loss to the general vitality, and a greater tendency to the progress of disease, from lowered vitality and lessened powers of resistance.

These are the natural consequences of neglected local disorders manifesting themselves in a disturbed systemic condition. Many if not all of such disturbed conditions of the system might be in part if not entirely prevented by recognition and treatment of a corre-

sponding or correlated local disease. The mouth should most of all be clean and in a condition of perfect health. Here begins the wonderful change which the nutrient material must undergo before it is manifested in the quick, springing step, the clear, bright eye, the ruddy skin, the merry laugh, and the light heart that mark the condition of good health. We are largely responsible for the lack of these if we fail to recognize and relieve conditions which interfere with the fulfillment of these naturally inherited physical qualifications. No system can be properly nourished, no organs perform their normal functions, if the food supplied for such nourishment is mixed with a percentage of poisonous and injurious matter.

The first process in the preparation of food for the system is its mastication, its trituration or division and mixing with normal fluids secreted by the glands in the mouth. If the teeth, the organs of mastication, or the tissues about them, are diseased, just in proportion to the diseased condition will the food be contaminated and rendered unfit for proper nourishment. With this as a watchword let us see what measures should be observed in order that these organs may be kept in perfect condition, be made to perform normal functions, and that no admixture of injurious substances takes place.

The most common evidence of the disease is accumulation of tartar (salivary calculus), due to an abnormal condition of the fluid secreted by these glands; associated with this are a congested line of gum tissue at the margin, and the deposit of salts of lime and soda from the degeneration of the congested blood in the gums and peridental membrane. These accumulations only aggravate the inflammatory condition, which makes it a progressive disease, growing more and more extensive as time goes on, and including more and more of the surrounding tissues.

The first step in the treatment is the thorough scaling of the whole surface of each tooth in turn, not forgetting to completely scarify the gums and deplete them of the congested blood. This process of scaling should continue at each sitting until all accumulations shall have been removed, the teeth left smooth, and the gums restored to healthy color, filled with new blood and all hypertrophy removed, and their margins adherent to the necks of the teeth. At each sitting just before dismissal the gums and teeth should be painted thoroughly with tincture of iodin. The tooth surface exposed should be thoroughly polished, using powdered pumice-stone and

orange-wood stick for this purpose, and convenient instruments to facilitate reaching all surfaces. Polishing should be done at intervals of three days for at least five times, until a bright, clear color returns to the teeth, and firm gum tissue of a normal pink color is obtained. Associated with the treatment at the hands of a thorough and conscientious dentist, there must go the regular daily care by the patient. His cooperation should be secured and no return to the former condition be allowed to take place from indifference or neglect on his part. A dilution of one to four of warm water and Glyco-Thymoline (Kress) respectively should be used as a rinse and mouth-wash as well as a gargle at least twice daily by the patient. Treatment should be continued until the normal condition is restored, all traces of congestion, inflammation and even redness have disappeared from the gums, and the teeth show a smooth, bright surface and a clear color. A study of symptoms and conditions of the disease, and treatment closely followed and continued, must result in the saving of thousands of teeth, and their being restored to years of usefulness; teeth which otherwise would be neglected, thought useless and needlessly lost.

AN IDEAL DENTAL LABORATORY.

BY CHARLES H. WORBOYS, D.D.S., ALBION, MICH. READ BEFORE THE MICHIGAN STATE DENTAL ASSOCIATION, AT LANSING, JUNE 28-29, 1904.

An ideal laboratory is probably an impossibility. Our offices are seldom built for our purposes, and we must be contented with what happens to be arranged for us. For this reason our laboratories are often so far from ideal that we cannot consider them even good. In my endeavor to describe an ideal laboratory I shall try to place before you such a laboratory as a dentist should have who does every sort of work that may be required of him. The many tools and appliances that are used by us for the work that is done in this section of the office will not be taken up in detail, as it would require a paper far too long for this occasion, but some will be considered.

The location of the laboratory should be among the first things decided upon in arranging the office. The proper place for this room is to the right of the operating room, and it should be at least twelve by fifteen feet. A room of this size may seem to some far

too large for convenience, but when it is remembered that one has to spend hours in this room we can readily see that it is if anything too small for good hygienic conditions. The work to be done at the different benches will require different sets of tools and appliances, and can be spread around a good-sized room and still be very convenient.

This room should be well supplied with light from at least two large windows at the front. I wish especially to call your attention to this point, as I have seen so many laboratories tucked away in a little dark hole, where it is simply impossible for any man to do that fine work which is required of us. No one realizes this more than I from an experience of about twelve years with my laboratory lighted mainly by a skylight, while I gave up two large front windows for my patients to sit at perhaps not more than fifteen minutes while waiting for me in the reception room. I made a change, putting my reception room under the skylight and the laboratory to the front. No patient has found fault with the location of the former, and I certainly have enjoyed the light and the convenience.

After the location comes the arrangement, which of course depends somewhat on the line of work that one usually does. We shall, however, construct such a laboratory as one needs for every sort of prosthetic work. The floor should be made smooth and then covered with linoleum of a single piece, if possible, and of a brownish color, as it wears better and is easier cleaned. The door is best as near the operating chair as possible, with a bench at the left of it toward the front window. This bench should be used exclusively for the porcelain work, be kept clean at all times, and nothing allowed on it that might mix with the porcelain powder. I keep a clean white paper on mine. All benches that are intended to sit at while working should be no higher than thirty inches, so that we can sit in a common hard-seated revolving chair that has a back. High stools should have no place in the laboratory, as we stand on our feet much of the time while at the chair.

To the right of the door is a most desirable position for the plaster bench, so as to have it as near to the chair as possible. Above this bench may be hung the bins for plaster, and the impression trays kept in a drawer just below. The plaster bench should have a hole near the wall with a hard brass plate around it, and a trough leading from the hole to a receptacle below for refuse. On top of

this bench a piece of plate glass should be kept on which to build models. Next to the plaster bench is where we need the sink, and it must have a very good trap below it or there will be trouble when the waste pipe fills with bits of plaster. Next to the sink should be the bench used for vulcanite work. The entire apparatus may be centralized in one bench and kept separate from other work. By being convenient to the sink and polishing lathe it will be practicable to do this work without soiling the person or laboratory. The plaster bench, sink and vulcanite work bench might occupy one whole side of the room.

At the front where the light is strong is an ideal place for crown and bridgework and the arrangement of teeth for artificial dentures, as this line of work calls for very nice fitting and there is no better place for it, and the grinding lathe should be here also for convenience.

Benches for the different lines of work are now made and well adapted to the various uses for which they are designed, and I believe that a man fitting up a laboratory would be able to do better by getting some of them than to try to have them built. One-half the money spent in a laboratory that is spent in an operating room would make a far different looking place of it than most of us have. As perhaps a third of our work is done in this room I am surprised at the shiftless arrangement of it which is many times seen.

Along the opposite wall there should be a fireproof bench for soldering, casting and melting metals. This bench is made of gas pipe with a fire-brick top and a back of about eight inches, and should be at least three feet long. Next to this, toward the back of the room, one can be arranged for the molding, as it will be close to the casting bench. Gas for soldering with the bellows under the bench, or compressed air for the blast when one has the apparatus. Zinc and lead can be melted over gas with the Bunsen flame. The electric arc is a valuable adjunct to the laboratory, as with it platinum can be melted and the scrap used. Gasoline has now been harnessed so well that one can do anything with it that can be done with illuminating gas. For porcelain work the results with the gasoline furnace equal those obtained with anything else. The electric furnace is about all that one can ask to fuse porcelain, and can be used for other purposes. There are on the market small heating stoves that I would prefer to a furnace built in the room for melting and refin-

ing, and they can be placed in the back part of the room and used for all purposes of a stove.

The polishing lathe should be as far from the porcelain bench as possible and yet have light enough to see to do the work well. Finished work is very important. The rolling mill need not be very close to the front, as metal work is all gauged. A good swaging block of solid timber, twelve inches in diameter at the base and eight at the top, thirty inches high, or an anvil in a box of sand, with a good heavy hammer handy, cannot be dispensed with.

At some convenient place should be located a rest couch, about six feet long and two feet wide, well upholstered and made as comfortable as possible. A ten minutes' rest, lying on one's back with the eyes closed and the mind free, will prepare one to meet the next patient, after a hard struggle which has drawn severely on one's strength. The laboratory will make it practicable to get this rest free from intrusion. The laboratory should also have a convenient place for a few choice books and other things which may be useful in spending idle time pleasurably as well as profitably. A well-equipped laboratory may serve as an excellent means for cultivating friendly professional relations with our confreres. A laboratory of good size, equipped with convenient benches and modern appliances, with good ventilation and light, will certainly enable one to do his best for his patients. It will be a pleasure to work in it and the laboratory tasks will not be despised.

Discussion. *Dr. E. C. Moore,* Detroit: I like the suggestions of the essayist as to size of the laboratory and good light. A corner room makes an ideal laboratory, for then you can get both light and ventilation. I fully agree with the essayist that we spend an undue amount of money in furnishing our reception rooms, which in a well-conducted practice serve only as places for short waitings of patients and for changing wraps. Some easy chairs, a few good books, a place for experimental research in mechanical lines, such as a general work bench with a nice turning lathe for metal work or such tools as can be afforded, will be the means of spending many idle hours entertainingly if not to great advantage.

Dr. J. F. Spring: I would suggest that a light-colored floor covering is preferable to a dark-brown one, as it is much easier to find small articles which one is likely to drop. A kitchen cabinet is a very convenient piece of furniture for a laboratory, as it affords

places for conveniently storing the numerous things which naturally accumulate in a laboratory.

Dr. Isaac Douglas, Romeo: I do not care for so large a laboratory as the essayist describes. My own is just seven and one-half feet square and has but one window, which is, however, forty inches wide. My laboratory is just off the operating room to the right. I have benches all around the room, the general work bench being immediately in front of the window. The plaster bench and vulcanizer bench are together and close to the door. I can sit at the work bench and without leaving my chair put my hands on almost everything in the room. My lathe is run by a water motor. I believe I can do my work as thoroughly with this compact arrangement as I could with more latitude.

Dr. N. S. Hoff, Ann Arbor: I most cordially agree with the idea of a sufficiently commodious laboratory to accommodate all the necessary appliances for doing all kinds of modern work. It is surprising with what meager and old worn-out appliances some good dentists are content to work. I recently visited an office which reminded one of a junk shop more than a dental laboratory. It contained almost everything, from a worn-out bird cage to a static electric machine, except that the dental appliances were few and worn out. The old foot lathe was so worn that it rattled badly. A battered vulcanizer and a few worn-out files and scrapers were practically all the tools visible. There was dust and dirt everywhere. It was a poor place for sociability and its occupant was not notorious as a sociable person. It is not necessary that our laboratories should be filled with all manner of devices, however useful they may be on occasions, but enough well-selected and up-to-date appliances necessary to do modern work should be found in every well-regulated laboratory. I like the suggestion of Dr. Moore, that we have a good turning lathe and such tools as we can use along with it. I know a dentist who has a photographing outfit in his laboratory which gives him a lot of pleasure. We should not of course clutter our laboratory up with too many things, but we often have a few minutes' time that we can throw into some outside work to advantage if prepared for it.

Dr. Worboys, closing discussion: I can readily see that practitioners in large cities cannot pay the rents necessary for the large laboratories I have described, which is to be regretted. I could not

do my best work in a laboratory the size of Dr. Douglas'. I need lots of fresh air and I couldn't get it in his seven by seven room, even if I were able to sit in the middle of it and reach all around it; I would feel so cramped that I could not speed my work. I don't think we have any right to hazard our health for the sake of turning out work rapidly. I keep an extra chair always for any dentist who might chance to come along and wish to call on me.

A MODERN OPERATIVE EQUIPMENT.

BY E. A. HONEY, D.D.S., KALAMAZOO, MICH. READ BEFORE THE MICHIGAN STATE DENTAL ASSOCIATION, AT LANSING, JUNE 28-29, 1904.

When this subject was assigned to me it appeared to be quite an attractive task, for I thought a couple of hours' consultation with a modern catalogue of dental appliances would immediately furnish me with abundant material for the subject in hand. After a little careful thought, however, I soon found if that plan were followed I would be in much the same position as the ruralite who for the first time ordered his meal from a printed bill of fare; having measured a goodly third or half of the entire bill he instructed the waiter to bring on that amount, only to observe some time later that the gentleman at the adjoining table was enjoying a real meal while he was filled to the brim with consomme.

A moment's reflection will be sufficient to convince any one that a complete description of what we have been pleased to call "A Modern Operative Equipment" can only be general in character if it is to have general application, inasmuch as a list of appliances sufficient in length to meet the requirements of all would keep you here until to-morrow morning in the reading alone. It would also bring together such a jumbled mass of names that there would be more difficulty in selecting such as would meet your individual wants than in the finding of your own hat at the close of a Lincoln Club banquet.

The selection of an operating outfit, complete and modern, requires careful consideration, and the more generous your bank account the greater should be the discrimination in making your purchases. Much care should be exercised in eliminating such appliances as have no real value. Nothing should be placed in the

operating room that does not contribute to the convenience of the operator or the comfort of the patient, for it is an easy matter to fill your cabinets and work benches with appliances, modern so far as recent invention goes, and yet add little or nothing to the quality of your work or the facility of your operation.

Another difficulty at this point is in knowing just where to draw the line between the appliances that properly belong to the operating room and those of the laboratory; but inasmuch as many offices in the larger towns and cities fail in space for laboratories, we will suppose for the time being that the laboratory work, such as vulcanizing, etc., is done out of the office entirely, and proceed to furnish the operating room with this in view.

Taking for granted that we are provided with a room not less than ten or twelve feet in width by about fourteen or more in length, with a window of good dimensions, especially in height, and facing the north or east, we will begin in an imaginary way to place a few of the appliances. The floor should be of either tile or hardwood, with as high a polish as it is possible to maintain, as no floor should have any covering that cannot be removed daily and cleaned. The walls and ceilings should be made attractive by paper or water color of such tints as are restful to the eye, together with a few well-chosen pictures, but should be kept free from anatomical charts, diplomas and other such forms of decorations, all of which are essential enough in their place, but should not be given space on the walls of your operating room.

It is needless to say that the chair, from a sanitary standpoint if nothing else, should have a disc base and should be the one you have found to yield the greatest convenience to the operator and comfort to the patient. It should be free from all upholstering and finished in cane, as this will be found to fill the requirements from a standpoint of cleanliness and will meet with the unqualified approval of the vast majority of your patrons.

The fountain spittoon should be furnished with a glass or porcelain bowl, with the metal parts of polished brass. The dental profession is to be congratulated for the beautiful and convenient appliances of this character with which it is supplied.

The next thing to be considered is the dental engine, and the preference among our best operators seems to be almost unanimous in favor of the all-cord. The only regret to me is that it presents

such a display of belts, pulleys and nickel work, and it will be a boon to the profession when some one will invent an engine furnishing power direct to the handpiece and eliminating to the greatest possible extent these objections.

The dental cabinet may be chosen from the many good ones now on the market, and should present the greatest convenience possible and be entirely free from carving and other attempts at cheap ornamentation, which simply serve as dust catchers, and soon become tiresome to the eye. This applies with equal force to all the furniture in the room, which should be of the same wood and finish. A roll-top work bench should be provided for crown and bridge work, piped for gas and compressed air, and wired conveniently for connection with the polishing lathe.

No office is complete without an electric switchboard, to which may be connected the engine, furnace, lathe, annealer, hot-air syringe, cautery, mouth lamp and such other electrical appliances as may be needed to meet the individual wants. This switchboard would be better covered or enclosed in a cabinet admitting the light from the side toward the window, and provided with a door on the opposite side through which we may conveniently operate the switches and yet conceal the entire appliance from the view of the patient. In fact, it should be the constant study of the operator to have as little machinery in evidence as possible.

If the building is not supplied with a compressed air system it must be provided in some other manner, which may be either the hydraulic or electric pump. Of the latter form there are one or two on the market that meet the requirements fairly well. The pipes leading from the receiver and distributing the air to the most convenient points for use should be concealed under the floors or in the partitions where possible. Attached to your switchboard or close at hand should be provided a gauge which will allow you to instantly control the air pressure to meet the requirements in the variety of cases for which it is used. I should like to emphasize the importance of this particular feature in the use of compressed air, as a strong blast of either hot or cold air on a sensitive tooth produces a decided shock that must be carefully avoided.

So far as I know the dental dealers do not furnish a plaster bench suitable for an operating room, yet it is very essential, as no one should be obliged to step many feet from his chair for anything in

securing impressions for crowns, bridges, etc. A bench for this purpose may be easily designed to meet all requirements and yet be in keeping with the surroundings. In addition to the above might be added a heater where hot water can be supplied on a moment's notice all day, and some form of appliance for administering nitrous oxid, which should be kept concealed from the view of patients when not in use. I place this latter apparatus in the operating room for the reason that its use is by no means confined to an anesthetic for extracting.

The above list of general appliances is by no means complete, yet I think it contains nothing that could possibly detract from the convenience of the operator. As to the smaller instruments, of which there is an endless variety of makes, I will not attempt to even outline, for it must be apparent to all of you that such appliances are gathered together one at a time as the necessity demands, on much the same principle as one builds up a library, and as much individuality is shown in the one case as in the other. A complete list of such instruments would inevitably contain much that would be as useless as the wooden dummies with which the newly rich man filled his bookshelves.

THE PROVINCE OF PORCELAIN WORK.

BY HART J. GOSLEE, D.D.S., CHICAGO. READ BEFORE THE CALIFORNIA STATE DENTAL ASSOCIATION, AT SAN FRANCISCO, MAY 16-18, 1904.

You will agree with me, I believe, that porcelain work is destined to become a prominent part of the practice of dentistry. While many of us have perhaps met with discouragement and failure, still we should remember that every art must go through its experimental stages, and that much of the discouragement with which we have met, and many of the failures necessarily accruing, are only the results of this experimental stage. We can now say, however, that porcelain work has passed through the experimental stage, and is a very important specialty of dentistry. But I do not like to refer to it in the light of a specialty altogether, for the reason that I believe every progressive practitioner should become qualified to do porcelain work. I should dislike very much to think of having to practice dentistry without being able to do this class of work, unless

I confined myself to some other practical specialty and devoted my time exclusively to it.

The possibilities of porcelain work are limited only by judicious application and skillful execution. We can learn, it is true, from observation, and all progressive men and women do learn daily from observation, but we must not overlook the fact that we are not usually born skillful, and that skill can be acquired only by diligent application. Hence if we do meet with failures we should not allow them to discourage us, because it is after all from our failures that we learn. In the acquirement of that degree of proficiency and of skill in the execution of the procedures incident to the successful employment of the porcelain art we must remember this fact—that above all other operations in the line of practical work we must pay to this one in particular the most scrupulous attention to details. We cannot neglect any one portion of the detail incident to the employment of porcelain without its having a material influence upon the successful achievement which we hope to accomplish.

To get at the subject from a truly practical standpoint and as briefly as possible, I am going to take up first of all the indications and contraindications for the employment of porcelain as applied to the filling of teeth. In this connection I think the greatest sources of discouragement and of failure can be attributed to *radical* enthusiasm. Indeed, we have men in the profession to-day who have proclaimed aloud that the days of gold fillings and of the use of gold pluggers were past, and that the fillings of the future would be along the line on which I am now speaking. While a staunch supporter of the enthusiast I am not an admirer of the radical enthusiasts, because they usually do more to retard than to advance the progress of art. If we could draw a line between radicalism and conservatism so that we might become, if you please, *conservative enthusiasts*, then I believe our efforts would meet with a greater degree of success. It is my belief that porcelain work in general, and in particular as applied to the filling of teeth, is certainly destined to become a permanent part of the practice of dentistry. I do not believe, however, that it will ever supersede all other methods. Indeed, no other method or material will ever entirely take the place of gold.

For cosmetic reasons we must use porcelain wherever we can, and whenever it is or seems to be indicated, and I think the greatest

class of indications for its use is that encompassing purely cosmetic requirements. Hence it is my practice and precept that wherever the indications seem favorable, and our desire is to approach the highest possible degree of artistic effect, porcelain should be employed; but that where the permanent preservation of the tooth or teeth necessarily demands a degree of strength which we cannot hope to get from porcelain, it should not be used. When referring to cosmetic requirements I mean simply those cavities which are within the range of vision. In the ten anterior teeth porcelain can often be used to the very greatest advantage, but when we approach the posterior part of the mouth, and thus involve those teeth which have to accomplish the greatest amount of work and upon which the greatest degree of stress is thrown, I do not believe we can always safely depend upon porcelain, because of its friable nature.

I shall speak briefly of the methods of procedure which are most commonly employed in the judicious application of porcelain. Much discussion is in progress at the present time, and has been since the introduction of this work, as to which of the two classes of material employed—the "high" or "low" fusing—is the most useful. Both of them serve a great sphere of usefulness, and I employ both. The largest proportion of my work, however, is done exclusively with the high-fusing bodies, mainly for the reason that in their employment we are enabled to get a greater degree of stability of color and form, both of which are very important, and the opportunities for which are somewhat diminished in the employment of low-fusing bodies. Another advantage in the employment of high-fusing bodies is the greater degree of translucency which they possess, which quality enables us to more closely approximate the color of the natural teeth. Consequently in a large proportion of cases the most successful results may be obtained by the employment of high-fusing bodies, as applied particularly to inlay work, and more especially as applied to crown and bridgework.

The greatest objection to the use of low-fusing bodies lies in the fact that we usually experience much difficulty in removing the gold matrix and preserving its shape and form during the procedure incident to its removal and investment. It is claimed that the use of low-fusing bodies offers an advantage for the reason that we can more easily adapt a gold matrix than one of platinum, but I have never become a believer in that theoretical advantage, for this

reason: It is true that we can take gold foil of the proper thickness and readily adapt it to a given form, but when we consider the fact that we must remove that, and that it must be removed with extreme care in order not to destroy its given shape, you will realize and concede that platinum possesses an advantage over gold for this particular reason. In many large cervical, labial or buccal cavities, however, I employ low-fusing bodies, because in these cases you can adapt the gold matrix and remove it, as their shape and location are favorable to the removal of the matrix with some degree of facility, and with some assurance of certainty in the preservation of its form.

A very clever little method for assuring the preservation of the form of the gold matrix was recently suggested to me by Dr. C. C. Allen of Kansas City. After carefully burnishing the matrix to the cavity, Dr. Allen suggests that we use gum camphor broken into small pieces and packed down into the gold matrix, after which we can lift the matrix off without danger of distorting the shape. The camphor can afterwards be burned out over a flame of any kind, and all deposit soon be burned off, and the shape will thus be preserved without doubt.

In considering the comparative adaptability, however, of gold and platinum, let us not overlook the fact that while we can form or burnish gold with a greater degree of facility, yet it is more difficult to remove, and when we employ platinum it can be adapted perhaps with less facility, but when it has been given a certain form it possesses that peculiar characteristic which enables it to retain that form. I believe that this is one of the most important advantages in the employment of high-fusing bodies, and also that platinum is the ideal metal for this particular purpose. In its use there is not much likelihood of having a misshapen or distorted filling, while such is very likely to occur in the employment of gold. While you can use a gold matrix and low-fusing bodies in those simple cavities in the labial and buccal surfaces of teeth with safety and to perhaps a greater advantage, still where the cavity involves two surfaces of the tooth platinum is especially indicated for the matrix and high-fusing body should be used.

Now just a word in regard to the adaptation of a platinum matrix. Some discussion is going on at the present time as to whether the matrix should be swaged or burnished, and as to the relative ad-

vantages and disadvantages of the two methods. We really swage the matrix when we burnish it, but we should never bring the burnishing instrument in contact with the surface of the metal itself. When we pack moistened cotton or spunk into the cavity with the matrix between it and the walls we practically swage it. I believe, however, that you can secure the best results in a combination of the two methods. In extensive cavities it is always my practice to first secure an impression in either gutta-percha or cement, whichever is preferred, or whichever can be used to the best advantage, and make from that a die or reproduction of the cavity. Then with the die properly invested the matrix should be swaged with flexible rubber in the cylinder and plunger apparatus. This conforms it approximately to the outline and shape of the cavity, but it is not my belief that we should ever endeavor to fit the matrix and finish the filling without carrying it to the cavity. After it has received its preliminary swaging, however, the final adaptation should be made directly in the cavity itself, so I invariably take an impression of all cavities which involve two or more surfaces and secure the preliminary adaptation of the matrix in this manner, then place it directly in the cavity and finish. I do not regard this procedure as a waste of time, and while it will take perhaps half an hour to get the impression and make the dies and swage, the time is well expended because you are certain of getting a more accurate adaptation.

In simple approximal cavities in anterior teeth, however, do not resort to this method for the reason that it is not necessary. You should remember of course that you must have plenty of space to begin with, and if this is observed you can adapt the matrix to simple approximal cavities in the anterior teeth without going to this expenditure of time, by burnishing into the cavity first, and then using tape—as you would a finishing strip—on the margins.

Now to touch briefly on the color problem. Several years ago it was recommended that inlays should be built in layers, and that the primary layers of the filling should be of a color closely resembling the natural color of the dentin. Now you know that the color of the enamel is distinctly different and apart from that of the dentin, and that the color of all dentin is approximately the same unless it has been discolored by the process of decay, so you will find that in almost all teeth you can and should begin with one of two or three

shades of yellow. Then the subsequent layers can be made to conform as closely as possible with your idea of the desired color as demanded by the color of the enamel.

The light blue shades can almost invariably be obtained by the employment of white body. If you use an absolutely white body you can place it on the primary layer at the point where you want the blue shade to appear, then in the final bake cover it with a bluish tint, and you can usually bring out the desired shade. You will find this of some degree of importance and assistance in these particularly light shades, because if you were to use a shade of yellow for the base of your filling, and try afterwards to bring the blue out on top of that, it might be difficult. But if the shade that you desire to obtain is rather light, after you have fused your first and possibly your second layer of yellow then place the white where you want the blue to appear in the final fusing, and you can usually bring about the desired color or at least a close approximation to it.

I never speak of the color problem as regards inlay work, however, without some degree of timidity, for the reason that we all look with such different ideas of and eyes for color. It is of course impossible for all of us to do this particular part of the work in the same manner, but I find that I can obtain almost any color with five or six different basal shades of body, while I believe many who have not a good eye for and idea of color use ten or twelve, and sometimes even more different colors, and then are not always very successful. The blending of these basal shades to bring about any desired color, however, is altogether a matter of experimentation and experience, and we must stick to it assiduously if we hope to cultivate the eye and thus be successful.

The greatest difficulty we find in securing the desired color to match the natural teeth is that occasioned by the change caused by the presence of the cement in mounting. In this connection Dr. W. H. Taggart of Chicago, who is one of our best men in this particular line of work, has recently made a valuable suggestion. He believes that we can overcome to a very large extent the change which takes place because of the presence of cement, if we can get a purely opaque body to line the matrix with first, and then go ahead and build up the filling in the ordinary manner. The opacity of this lining would doubtless prevent any change of color which would be caused by the presence of cement. If the manufacturers will take

this up and supply us with a body which is opaque, I believe we can overcome or eliminate to a great extent the change that does occur in porcelain fillings after mounting.

In regard to the application of porcelain to bridgework I would say that, enthusiastic as I am over the possibilities of this particular line of work, I do not believe in the extensive employment of porcelain in the construction of dental bridges. I rarely employ porcelain in the construction of bridges more extensive than five or six teeth, because the more extensive the piece the greater is the likelihood of a change of form occurring from shrinkage, and the greater is the tendency of course to subsequent fracture from stress or accident; and also because of the difficulty of repairing and the necessity of removing in the event of accident of any kind. It is true that we can construct bridges of five or six teeth in such manner as to have them possess a degree of strength which will insure favorable permanency, but when we go beyond that I am somewhat skeptical. In the posterior part of the mouth I never hesitate to construct a bridge from the cuspid to the second molar—for example, on one side of the arch—nor would I hesitate to construct a bridge involving any or all of the anterior teeth. To go beyond that, however, and construct a bridge extending from the first or second molar on one side to the bicuspids or molars on the other side, I should be very apprehensive or doubtful of the permanency and favorable success of so large a piece of work, irrespective of the intermediate abutments, and should much prefer to build it in sections, or otherwise to make a portion of it in porcelain and a portion in gold, finally assembling them by soldering.

Along this line I want to say something with regard to the construction of porcelain bridges. In the practical and successful employment of this class of work it is always absolutely necessary to support the porcelain which is formed into the masticating surfaces of bicuspids and molars. I have constructed many bridges without a proper observation of this requirement in the shape of a saddle, but with scarcely a single exception those bridges had to be made over for the reason that the porcelain forming the masticating surfaces of the bicuspids and molars fractured, and it became necessary to remove them. The point I want to emphasize is this—if the bridge or portions of the bridge are to be subjected to a great degree of stress those portions which are to be so subjected must be pro-

tected against it by every possible means. Hence, where you are supplying bicuspids and molars the employment of a saddle is absolutely necessary. I am also very positive that if the saddle is properly adapted to the tissues upon which it rests you have practically a self-cleansing surface, and I am confident that your experience will bear out the assertion if you will observe the proper degree of accuracy in the adaptation of the saddle. In this connection let me say that we should always construct the caps or covers first, then with them in position take an impression of the tissue that is to be covered by the saddle, secure a die and counter die from it, swage the saddle to the proper outline, of 32 g. platinum, then place it in the mouth, fit it to the tissue and to the caps, take an impression with all in position, attach them with solder, and then go ahead with the construction of the bridge. Make sure of the most perfect accuracy in the adaptation of this saddle, by carrying the skeleton bridge to the mouth and burnishing to a close contact. In other words, do not depend upon your dies exclusively for all the accuracy you desire in the adaptation of the saddle. If you observe these directions you will have an adaptation which will be practically self-cleansing, or at least as nearly so as it would be possible to obtain, and as a result you will have none of the tenderness or soreness which occurs as the result of undue pressure upon the tissues. Further, we never have hypertrophy unless we have irritation, and we can avoid irritation by always having perfectly smooth, rounded edges in contact with the soft tissues.

As applied to individual crown work, I am of the firm belief that there is nothing which we do to-day that gives us more satisfaction than the employment of porcelain crowns. The day for the ready-made crowns, such as the Logan, Davis and others, has passed, and an individual and special crown should be constructed for every root we attempt to restore. There is every reason for this assertion. In the first place, we can do it almost as quickly as we could adapt the ready-made crown; in the second place, we can achieve a far greater degree of success in the preservation of the root by obtaining greater integrity and stability in the attachment between it and the crown, and in the third place, we can achieve far more artistic results.

In the construction of porcelain crowns for the six anterior teeth the same general principles apply. I want to emphasize the fact that if porcelain crowns are properly constructed we have a greater de-

gree of strength and a result more favorable to permanency than we can possibly obtain by any other method. Take, for example as a comparison, the construction of the so-called "Richmond" crown, where we employ a porcelain facing and metal backing. The porcelain facing in this style of crown is retained to the metal construction exclusively by means of the attachment pins, while in a porcelain crown we further fortify the attachment of the facing by fusing the porcelain over the entire lingual surface, and as a result you will find that the facing will rarely if ever break away from the crown. If the metal construction has not been properly observed, all of the porcelain may break away from the metal, but the facing itself rarely will. If the construction of the crown has been properly observed and the execution has been skillful, you will not have patients returning with facings broken off or fractured, as is such a common experience.

There is another great objection to the employment of porcelain facings with metal backings in restoring any of the anterior teeth. That is, because of the presence of the metal backing the translucency of the facing is entirely destroyed and hence the color is changed, and as a result it is a difficult thing to match the natural teeth with any degree of accuracy. For these two important reasons I believe that porcelain for individual crown work is the ideal material. As applied particularly to restoring the bicuspids, there is no doubt but that porcelain offers the greatest possibility for successful achievements, mainly because it is so difficult for us to construct in any other manner any kind of a bicuspid crown which will be artistic.

I have been somewhat cautious in presenting this lengthy subject because I did not want to tire you out, and I am going to conclude my remarks by saying that I am of the firm opinion that if we hope to achieve the greatest degree of permanency in the preservation of the roots of natural teeth the employment of a band in the construction of crowns is almost always indicated. The only possible criticism anyone can make in connection with the employment of a band is the possibility of subsequent irritation resulting from its presence. We know the extreme susceptibility of the alveolus and soft contiguous tissues to the slightest irritation. No irritation will result, however, if you will first properly prepare the roots. This is where we all make mistakes, and I dare say all of you will agree with me that at least seventy-five per cent of dentists prepare roots

for the reception of crowns in a more or less perfunctory manner. The success of any kind of crown will depend more upon its adaptation to the root than upon any other feature of the construction. Hence I would rather spend an hour in the preparation of the root, and thirty minutes in building the crown, than vice versa, and you will never have any great degree of irritation result from the presence of a band if you will first of all properly prepare your root, and secondly *fit* the band to it.

Various methods for facilitating the construction of crowns have been advocated, among which are some involving an effort to avoid fitting the band to the root by the telescoping method, as a means of saving time. I do not regard such methods as practicable, however, because if you attempt to swage the cap to fit the end of the root you must first pack the soft tissues away until you freely expose the end of the root, and second, you will find that a swaged or seamless cap fits closest to the root at the extreme angle between the base and the periphery. This is not where you want the closest adaptation, but at the extreme edge of the band, which is difficult to accomplish by the swaging method. I have very little use as a rule for those methods which are designed purely as a means of expediting the procedure, without any regard to the greater accuracy that may be obtained by other methods. If you employ a band at all remember this: First of all you must properly prepare the root regardless of how long it takes, and second, make a band that fits.

TREATMENT OF PERFORATED ROOTS.

BY S. E. BROWN, D.D.S., LINCOLN, NEB. READ BEFORE THE NEBRASKA STATE DENTAL SOCIETY, MAY, 1904.

Perforation of the roots of teeth is a condition all too frequently encountered, but one which, while troublesome and uncertain to treat, is in a majority of cases attended with success. The treatment of troubles of this nature is chiefly mechanical and success depends not so much upon the materials used as the careful manner with which they are inserted. The medicinal agents to be used are few and play only a minor part in bringing about desired results.

When the perforation is through the apex it can be treated and the canal filled in the same manner as an abscessed tooth in which the apical foramen has been enlarged. If there has been considerable

irritation and inflammation, a dressing of aristol and oil of cloves and cassia should be forced to the apex and left until all soreness has disappeared, when the opening may be filled.

If the case has continued for some time after perforation there is in most instances an abscess and must be treated as such, the method for which has been explained so frequently that it is unnecessary for me to dilate upon it. After the cause has been reduced or obliterated the perforated cavity and canal may be filled with little cause for anxiety or further trouble.

When the side of the root is perforated the soft tissue in most cases has filled the cavity and may, because of complications, have formed a sinus externally. In cases of this character several methods may be employed—the tissue filling the opening may be removed by excision or by cauterizing, by packing with cotton and carbolic acid or oxpara liquid. If these are used care must be taken not to leave them too long, to avoid sloughing. Iodin and trichloracetic acid may also be used, or in some small perforations, only partially filled with tissue, the cavity can be cleared by packing with dry cotton, which swells as it moistens, forcing the tissue back to its normal condition. This done, wipe the cavity out with adrenalin chlorid, using slight pressure, which stops all flow of blood and moisture.

If the perforation is near the gingival margin of the gum, pass a small flat stub-blade, correctly shaped, up under the gum, so as to cover the opening, dry out the cavity through the canal with hot air and alcohol, make slight grooves in the side of the opening, and fill as perfectly as possible with high heat gutta-percha, forcing the filling up tight against the instrument, and burnish nicely the filling around the margin of cavity of outside wall of the root. This done there is no excess of filling under gum and no cause for further irritation.

Should the perforation be high above the gum margin, so that it is impossible to cover the opening with the steel point, first treat it by forcing out the soft tissue with a pledget of cotton moistened with an ethereal solution of aristol, salol or iodoform, which should remain from one to two weeks. Then remove the dressing and cleanse the canal and cavity thoroughly with dioxogen and dry with hot air, take a piece of warm gutta-percha and form a plug, pass it up the canal into the perforated cavity, being careful to extend it only to the outside wall of the root, and remove. This will indicate the exact

amount and size of filling required to fill the cavity, or this same plug may be used as the filling, cutting off the end so it will not reach to the outside wall margin when placed back in the opening. With a piece of cotton wound upon a suitable instrument of blunt taper-point, bathe the cavity with adrenalin, checking flow of blood or moisture, render the parts perfectly aseptic, and again dry the canal and cavity thoroughly with hot air and alcohol, fasten the plug to some long tapered instrument, dip it in chloro-percha and place it in the opening, pressing it gradually to place, care being taken not to force it beyond the outside wall of the root. Should cases of this character prove obstinate, abscess, and continue to give trouble, proceed as with acute form of blind abscess, make an opening through the gum and process overlying the point of perforation. This may be done in different ways—by lancing, trephining, drilling through the gum and process, or with carbolic acid. With carbolic acid proceed as follows: A piece of spunk cut in crescent shape, cotton or bibulous paper is placed about and below the place to be opened to prevent spreading of the acid on the gum. With the acid close at hand, select a fair-sized spoon-shaped excavator, absolutely clean and very sharp, dip it into acid and apply to gum, scraping it away gradually as it is cauterized by the acid until there is slight bleeding, when the acid is again applied, repeating the operation until the process is reached. This is comparatively a painless and a bloodless operation. To open through the process, select a spear-shaped drill or trephine, one-eighth or one-sixteenth inch in diameter, and with the engine running rapidly force the drill through the process until it strikes a probe which has been passed up the canal and extends out through the cavity. This done, sterilize and stop blood and moisten with adrenalin. Insert a flat-faced amalgam plugger through the opening in the process covering the mouth of the perforation cavity; thoroughly cleanse and dry out the canal and cavity, and fill as previously described, with gutta-percha or amalgam.

If a crown with pin-post is to be inserted on a perforated root, it is essential in some cases to cap the inside opening of the perforated cavity to prevent trouble arising when the crown is cemented in place. Here may be described briefly the method used in treating a left superior lateral root on which a Logan crown had been adjusted. The root was perforated through the labial aspect of the apical third. The crown had been worn two years, during which time the patient

had suffered with severe odontalgia, resulting in abscess and fistulous opening at the point of perforation. With a small spear-shaped drill passed between the base of crown and root the pin was cut off, the cement removed from around the pin in canal, and pin removed. The canal was then thoroughly cleaned, removing all foreign matter, and sterilized with dioxogen, forcing it through the fistula. The perforated cavity was then packed with cotton immersed in clove oil and aristol, which was allowed to remain two weeks, at the end of which time the treatment was removed and cavity filled as previously described. With great care the apical portion of the root canal was enlarged, making the entire canal to the apex larger than necessary for the reception of a small Logan pin. A band was made of 34-gauge pure gold to fit a pin the size of the Logan pin, this lining was fitted into the canal and extended well up in the apex beyond the perforated cavity and reached down about two-thirds the length of the canal. The canal was then dried out, the pin oiled to prevent adhering to cement, and placed in the band. The band and pin were then set with a thinly-mixed cement, gradually forcing band to the end of enlarged portion. After cement was set the pin and surplus cement in the canal were removed, and the Logan crown fitted and cemented in place. The result of the operation was perfect healing and complete restoration of the root to its normal condition.

In perforations of the pulp cavity the treatment is similar to that already given when the openings are small. If there is a large perforation it is in most cases best to cap before filling. Another case treated will best serve to illustrate: A large perforation in the floor of the pulp cavity of superior right first molar had been caused by decay, leaving thin jagged margins. The opening was washed with dioxogen and packed with a dressing of cotton, aristol and cloves; this treatment was continued about six weeks, when all soreness had disappeared. All decay was thoroughly drilled away and over the opening was burnished a thin piece of platinum, getting as perfect adaptation as possible, the walls of the opening were then cleansed and dried with hot air, a thin layer of temporary stopping was placed on the gum side of the cap and heated and carefully pressed into the cavity so that it adhered to all the margins of the opening. Over this was put a cement filling, the tooth prepared and a gold crown adjusted, which has been worn since May, 1895, giving perfect satisfaction.

It is not possible to treat and save all cases, and this is often a very perplexing problem, the solution of which is apt to give the dentist much trouble, and he will be called upon sooner or later to decide whether a root that has been perforated can be saved or should be extracted; however, in the hands of a skilled operator, much can be accomplished for a badly abused tooth. It is not well to proceed with too much haste to extract such a tooth, but it should be carefully and thoroughly examined, and if it can be saved the dentist has rendered his patient a valuable service, and has the satisfaction of feeling that his efforts have been crowned with success and the pride of having overcome what at times seemed an unsurmountable obstacle.

Discussion. *Dr. H. R. Hatfield*, York: Could we not use some form of treatment that would not have to retain that inflamed condition so long, and would it not be advisable, instead of using aristol and cassia, to use a more mild antiseptic, for instance, oil of eucalyptus or oil of cloves, which do not irritate quite so much? Of course plain cassia does not irritate the soft tissue, but it depends largely upon the kind of cassia that you happen to get. A good deal of the oil of cassia that we buy is stronger oil made from a different product. I don't think that cases of that kind need treatment so long. We overtreat more than we undertreat, in cases of that kind and other inflammatory conditions, although I admit that in chronic conditions of long standing it takes considerable time. I never have treated any perforated roots that have had mechanical work done upon them, outside of my own, and those I have always diagnosed at the time. Two of these I have had the misfortune to lose, and some others at the present date are doing good service. But I have learned that if the perforation is not large and does not injure the soft tissues too much, simply stop the blood and sterilize the canal, as we should in all matters of good canal filling, and fill the canal with gutta-percha in the regular way, being careful if it is punctured on the side of the root to not give it enough pressure to force through the canal out into the soft tissues, and although there may be some trouble of this kind, with proper local treatment it will get along in fairly good condition. I would not suggest that this be a very large opening, and where the tooth is perforated at the apex we all know how to get the approximate length of the tooth and fit the canal accordingly; we know the size of the instrument

that has gone through and can cut our gutta-percha accordingly, and we can get the length of the root and make the point that length, and I believe we will come as near to filling to the apex of that root under these conditions as we do under the ordinary conditions where the apex of the root is still intact.

Dr. Shriver: My impression is that the great majority of these cases that are perforated you will eventually treat with the forceps.

Dr. Brown: In regard to the one I treated in that way, the patient was a fellow dentist and I treated him while working in his office. Now that tooth has rendered him over nine years service, and if it does happen to be extracted at some time in the future the service that it has given has well paid for the work that was put upon it. I never have advocated the perforation of the root; we never should perforate the root of a tooth, and in most cases it is due to carelessness in our effort to open up a tortuous root canal to try to do the best work we can. I think that possibly in filling the root of a canal in some cases we get through the side of the root, which is wrong.

One other point was brought up about treating a case too long. Now, if I should perforate a root I would immediately try to fill that opening. I was referring to a case where the trouble had existed for some six months, and here I gave the lady a Logan crown which she has worn for two years. In that case where the root of the canal was lined with a gold band, a platinum band might as well have been used, but I have seen that case within three months, and it has been worn over two years, although at the start there was a large fistulous opening and a large growth on the outside of the gum.

NEURALGIA.

BY DR. JAMES G. ATTERBERRY, TECUMSEH, NEB. READ BEFORE THE NEBRASKA STATE DENTAL SOCIETY, MAY, 1904.

In choosing the subject of neuralgia I did so because I find very little literature on the subject, and I think it is one which demands more attention than is generally given to it. How often we have seen or heard of cases where the teeth have been sacrificed, thinking they were the cause, in the hope of giving the patients relief, and what was the result? No abatement of the trouble, and the discom-

fort to the patients of having to wear artificial teeth, when perhaps if the dentist had given some study to neuralgia they might have had the use of their own teeth and possibly have been restored to health. But the causes for neuralgia are often so obscure that it is impossible to locate them at all, but if a direct exciting cause is found and removed the patient recovers rapidly.

Neuralgia is a term used to designate an affection characterized by pain and located in the trunks or branches of the sensory nerves, and dental neuralgia is a form that has its direct exciting cause in some affection of the teeth. The pains in neuralgia are peculiar to this affection. They are sharp, lancinating, piercing, coming on in paroxysms following each other in rapid succession, or there may be intervals of time between them, lasting from a few seconds to several minutes. The attacks may come on often, or there may be days or even weeks when there will be no trouble noticed. The pain may dart from point to point along the course of the nerve, and it will be almost impossible to tell where it is. It may change its location slowly, even seeming to center itself in one spot for a short time, then again the pain may be felt along the whole course of the nerve. Neuralgic pains never develop from acute inflammation. A period of preparation seems to be necessary for the development of certain conditions of the sensory nerves to produce the pain.

Chronic toothache need not necessarily develop into neuralgia, but it often does. It is known beyond a doubt that neuralgia of the fifth pair of nerves frequently has its origin in some diseased conditions of the teeth, and we also know that an affection entirely occult may be deflected to the fifth nerve. When a patient comes complaining of severe pains in the head and face we should be extremely careful before we decide what to do, as this trouble may not arise from any condition present in the teeth, and we should not fail to take warning before removing the teeth, which is often done after the case has run a long time without any relief. We would have the case as above stated, and we would certainly feel discouraged, ourselves. In diagnosing a case of this kind two points may be relied upon safely: first, in every demonstrated case of dental neuralgia the second and third branches of the fifth nerve have always been involved, one branch being affected without the other being involved is a contraindication, and, second, the act of conducting a sensation from the surface is also a contraindication of dental neuralgia, as

the pain is always deep-seated, and the act of transmitting impressions from the surface by rubbing the skin with the hand would produce no effect—as producing a paroxysm. We should also not allow ourselves to get sympathetic pains, which may be present in severe toothache, confused with neuralgia; they have nothing in common with it. Sympathetic pains are never sharp or darting like neuralgia, but are steady and are not so severe, and are almost always accompanied by severe pains at the seat of the lesion. In cases examined it is found that teeth without living pulps are never the cause of neuralgia. This is often contradicted, but all cases examined by Dr. Black of Northwestern University Dental School indicate that there has never been one resulting from a tooth with the pulp removed. He says in cases where there is reason to think otherwise examinations have not been thorough, and that portions of living pulp are certainly present.

The causes of neuralgia are predisposing and exciting. In those predisposed to neuralgia there seems to be a pathological condition affecting the functional constitution of the nervous system, and those who are so disposed will have the affection developed by trifling causes, while in those who are not so disposed the same causes will fail to produce this result. Exciting causes are wounds, mechanical irritations, exposed pulps and things of that nature. In many cases where no cause can be found it is thought that the changes in the bony orifices through which the nerve passes have been a cause. As to pulp nodules, there is a difference of opinion, but it would seem that the sharp corners which may be formed would produce an irritation that would degenerate into neuralgia. By far the greater number of cases of dental neuralgia develop from exposed pulps in places where they are protected from injury, but through gradual irritation develop into neuralgia. Such teeth are seldom sore to the touch, and the practice of rapping the tooth with an instrument is not considered reliable by many physicians and dentists. The pulps are generally found to be very sensitive, abnormally so; but a complete state of anesthesia will follow.

Alveolar abscesses sometimes cause neuralgia by the burrowing of pus into the mental foramen. I read of one case where exostosis of the roots was a cause. The case was of five years' standing, tooth was elongated from not having an antagonist, and when removed the roots were found to be exostosed. Complete recovery followed

in a short time. Of course we could have no way of knowing whether roots were in this condition or not, but it might be of interest to note the case. Impacted teeth are considered by many to be a direct exciting cause by producing pressure on the nerves due to crowded condition. It is extremely difficult and often impossible to locate the causes and they demand the closest attention, as they may be so slight that we would ordinarily never notice them. A cavity at the gum-line, covered by the gums, could easily escape our closest search, and we should always be very careful before we proceed with our treatment.

X-RAY TREATMENT FOR PYORRHEA.

BY ELIZABETH C. FIELDS, D.D.S., LINCOLN, NEB. READ BEFORE THE NEBRASKA STATE DENTAL SOCIETY, MAY, 1904.

No therapeutic measure of this age is probably attracting more consideration among the medical profession than electricity. Although man has known of the existence of this power or force for ages, only recently has it become perfectly controllable. The laws that govern the action of electricity have become as demonstrable as any of the other natural laws. In the curative art electricity is being employed in a great number of ways, depending upon the variety, density, voltage, and numerous other conditions of the current. In the so-called X-ray we have probably the most remarkable therapeutic agent discovered within the last decade.

It has been my good fortune to watch some rapid cures apparently due to treatment by electricity alone. Then accidentally happening upon a dental magazine which contained Doctor Price's article on the "Treatment of Pyorrhea Alveolaris with the X-ray," interest was immediately aroused. There is no trouble which so baffles the dentist as this gum disease. It often takes months of painstaking effort, both mechanically and medicinally, to produce results, and the vigilance must not then be relaxed or there will too often be a recurrence of disease. Knowing that electricity when properly applied would cure diseases allied to pyorrhea in those patients with a gouty diathesis, it seemed probable that the article mentioned was founded upon fact, and anyway it seemed worth trying, so I selected what seemed to be a typical case.

The gentleman, perhaps fifty-five years of age, had been troubled

with sore teeth for years; had been treated by different dentists at various times, but so far had secured no permanent relief. The four lower anterior teeth seemed to be in a more aggravated condition than the others, although they were all more or less sore. Perhaps this extreme condition of the lower anterior teeth was aggravated by the irritation of excessive work caused by the loss of the four upper anterior teeth. The gums around these teeth were swollen, highly congested, and as is usual in such cases, bled upon the least provocation. Pus was abundant. Having no particular appliances for such a case, the treatments were at first a little difficult and perhaps not so satisfactory as could have been desired. I gave the gums the benefit of the direct ray by having the patient hold down the lower lip with his hand. There was such an improvement after the first treatment that when the patient returned for the second he asked if the ray could not be thrown upon all his teeth. Later a metal plate was constructed to hang upon the lower lip and thus shield it from the direct rays. At first the treatments were short and the ray at some distance from the patient, but the time was gradually lengthened and the instrument placed nearer the face, until now the patient has a twelve-minute treatment with a tube distance of four inches from the face. In accordance with suggestions offered by Doctor Price, no special preparation of the patient was made. The pus-pockets were not treated either mechanically or by the use of medicine. It was simply an experiment. After a few treatments, upon being asked how his teeth were, the patient replied that he did not know he had any teeth. Since then there has been no soreness, and the next improvement noted was in the condition of the gums. They gradually took on the natural pink color and became constricted around the teeth, the swelling almost entirely if not altogether disappearing. The amount of pus has gradually diminished until now it is scarcely perceptible, and the teeth are tightening, the laterals being about in their normal condition. If I can judge from present indications a cure will be effected, but whether permanent, time alone can tell. Still there is much to commend this method if it is even as satisfactory as the old, for it is absolutely painless and much easier than the mechanical, both to the patient and the dentist.

Not much is known as to the whys and wherefores of the effects of the X-rays. Under the microscope we find in general that the

primary effect of the ray is to increase the blood supply, producing a hyperemic condition, while the secondary effect, by continuing the use of the ray, is that of anemia. The lumen of the capillaries is lessened and the amount of connective tissue increased. This cuts off the blood supply to the pathological area, and the surrounding tissue shows abnormal activity of cells, which activity is what assists nature in effecting a cure.

Doctor Shannon has seen the case a few times and perhaps can add something to what I have said.

Discussion. *Dr. Shannon:* I first saw the case at the end of the eleventh treatment. At this time, as the essayist has said, the case had improved wonderfully, and the tissue had returned to a normal condition, with the exception of that in the immediate vicinity of the inferior central incisor. I was unable at any point in the anterior six teeth to find any pus with the exception of this one place, where there was pus. I saw the case one day last week and the pus had apparently ceased at that point. The gentleman told me that his teeth were very loose, very sensitive; that he was very found of eating apples and had been deprived of the pleasure of biting into an apple because of the soreness and pain that was produced by doing so with his teeth in that condition, but that after the first few treatments he could eat apples as he did years ago without any pain or discomfort, and he said that any trouble or any feeling that was unnatural in his teeth was entirely gone. We all know that it is difficult by means of instruments and medicinal agencies to bring about so radical a change as this in that length of time, for even though we had removed the soreness from the gums and perhaps tightened up the teeth some, there would still be a sensitiveness due to the exposure of the root, and he claimed there was no sensitiveness about the root. From what I have seen of the case I am decidedly in favor of this treatment.

PROSTHETIC DENTISTRY—SOME FEATURES.

BY F. B. DAMERON, D.D.S., LINCOLN, NEB. READ BEFORE THE NEBRASKA STATE DENTAL SOCIETY, MAY, 1904.

In presenting this paper it is not my intention to advance any new or original features, but to bring before you a few facts regarding that branch of dentistry which, speaking generally, is sadly on the decline. Within the last few years great advance has been made

in the preservation of the teeth and the pathological treatment of same, but as for the prosthetic branch of dentistry nothing, outside of rubber and celluloid as a base-plate, has been added to this science which would be of benefit to the patient who so unfortunately is obliged to wear an artificial denture.

When we make an artificial denture we start to do three things: first, restore lost speech and articulation; second, restore or preserve the facial expression; third, restore lost function of mastication. Not all of us, though, finish what we start. After the preparation of the mouth, which must be thorough if we expect success, the first thing is to take the impression. We all should know when we have a good impression, yet I believe that the improper taking and treating of the impression are the main cause of a large number of failures in prosthetic work.

In the treatment of the impression the question of the air-chamber comes up. Within the last few years this subject has been given a great deal of thought and has been discussed by our leading prosthetic dentists. There is still a great difference of opinion and I must leave the question to be decided by each individual. The placing of an air-chamber as a relief requires, on the part of the dentist, a thorough understanding of the hard and soft portions of the patient's mouth; yet there is many a dentist who places his relief at random, and if the plate stays up he is highly pleased with the results. I believe in using the air-chamber judiciously, and condemn the manner in which so many dentists insert those clumsy, sharp-edged affairs that are intended to produce relief, but which are positively injurious. The worst of all are those which have deep excavations. They constantly irritate the mucous membrane, and are a detriment instead of an assistance to the patient. We must study each individual case, as some show no need for relief, while in others it is absolutely necessary.

Now comes the selection of the teeth, and right here is the one great esthetic failure. At this point we encounter two great disadvantages, namely, the inability to get teeth of right size, shape and color, and the whims of the patients who seem to think they know more about it than the dentist. In dealing with your patients don't try to force such and such upon them, but have due respect for their wishes; make your selection and if they object try and educate them to the good points of your choice. Always remember you

have the patient's relatives extending back to their forty-second cousins to please, and be sure they leave the office satisfied.

One great mistake is made in not selecting teeth adaptable to age. We should know that teeth deteriorate with age, the same as any other part of the human body. One of the things that makes plate-work so disgusting to me is to see old people with a set of nice, white, pearly teeth, that one would imagine could be found in none other than a young person's mouth. What is there esthetic about such a case? Not a thing. Those people are a walking advertisement of the poor artistic qualities of the dentist who made the teeth.

In the selection of teeth there is only one correct method to follow, and that is trying them in the mouth. I don't believe there is one dentist out of a hundred who can take this shading and, even if he does know anything about the different temperaments, select a color which when placed in the mouth will come near blending with the features of the patient.

The teeth themselves are of vital importance to the success of your denture, yet who ever saw a set of artificial teeth that compared with our natural ones. The teeth we get from the dental depot are all of one shade, while in our natural teeth we usually find a variety. I find that in a large number of cases the bicuspids and molars are too small. By breaking sets and taking anterior teeth from one and posterior teeth from another this fault may be remedied. To overcome these failures in size, shape and color we must appeal to the manufacturers of porcelain teeth; and until then we may expect the same old line.

Now we come to the restoration and preservation of the features of the patient. No matter how perfectly the teeth are articulated, unless you pay attention to age, sex and facial contour the result will be apparent and an observer cannot help but tell that the teeth are false. Our whole system is built under a universal law of correspondence, and if we disregard this law in the making of an artificial denture, we throw all the features of the patient out of harmony. After extraction of the teeth the general rule among dentists is to say to patients: "Now go home and let the gums thoroughly harden, then come back and we will take the impression and make your plate." What happens in a case like this? When they come back we find the maxilla has become shrunken, the muscles of expression, which should have been supported, have shrunken to the

contact point of the maxilla, and all the features have become permanently adapted to the change.

Now we insert the plate, which restores the lips and cheeks to their normal position or nearly so. What is the result? The effect on the expression is such that the patients complain of too much fullness; their friends notice the difference, and we find the patients more or less dissatisfied. If we can get them to put up with this unpleasantness for a while all will be well, as the muscles will adapt themselves to their new position and we will finally get good results. The only way to overcome this trouble is never to allow the tissues to shrink. Preserve the tissues and expression from the time the teeth are extracted. As soon as it is possible to take the impression the plate should be inserted. This denture would support the lips, cheeks and muscles in their normal position and in the end we would have excellent results. I realize that it is a very difficult matter to impress upon patients the value to them of two or three temporary sets, but if we practice conscientious dentistry this is the way we should educate our patients to have it done.

Now this brings us to that side of the question which appeals to us all—the commercial. I think the following rule can be laid down: The artistic qualities of a plate are in proportion to the price paid for same. Since I have been practicing dentistry the most puzzling question to me has always been, Why is plate-work so cheap? If we take the ability it requires to perform the different operations in dentistry, isn't it true that for plate-work we should receive the highest remuneration? I say, yes—if we make a plate as it should be made, but so few of us do this. For the price we now receive for artificial dentures I say we turn out value received. No one is to blame for not desiring to make plates at present prices. A dentist with an ordinary practice cannot afford to do it, but this is no excuse for some of the botch jobs that are turned out.

You all know that dentistry has not the high standing among the various professions that it deserves, and I firmly believe the reason for this is the cheap, uncomfortable, inartistic plates that we have forced upon the public. That being the case, what shall our aim and purpose be in this matter? The only way for prosthetic art to be raised to its deserved position, which will in turn elevate the whole profession of dentistry, is for every one to start right at this time with that set purpose in view. It will require a great

deal of sacrifice on our part and we may never reach the goal, but our persistence will enable us to come as near the mark as our ability will permit. A man who has lots of will power but not much ability can do more in the end than the one with the ability but who has no set purpose.

Somewhere I have read the following which brings out this thought nicely: "Success in its best sense is not always found in attaining that for which we plan, but rather in making the best that can be made of ourselves—in doing as well and rising as high as our powers will allow." The poet Young has well said:

"Thy purpose firm is equal to the deed;
Who does the best his circumstances allow,
Does well, acts nobly; angels could do no more."

THE BUSINESS SIDE OF THE PROFESSION.

BY R. M. PEARCE, D.D.S., ROCK ISLAND, ILL. READ BEFORE THE ILLINOIS STATE DENTAL SOCIETY, AT PEORIA, MAY 10-12, 1904.

I am well aware that a paper on such a subject is a radical departure from the time-honored customs of this society, which usually has before it for discussion papers of a purely scientific nature, but this to my mind is as proper and ethical as any scientific subject on which I might write, and I do not think the contention can be raised that it in a degree borders on commercialism. Its presentation has been prompted by my observation of a great number of failures from a business standpoint, not only of some of the great men in the dental profession, but of those in other professions as well. I know of nothing more pitiful than to see the declining years of some truly "Grand Old Man," that should be spent in comparative ease and comfort, spent in toil and poverty, due to improvidence or lack of business ability, and who, if not entirely dependent upon the day's income for his sustenance, is goaded on to the last with the thought that there will be nothing for his family when he is gone. This is not an unusual condition nor will it be rectified by the simple fact of bringing it before your attention.

The reason is mainly due to improvidence, for while the income of the average practitioner is not large, it is sufficient to provide for a rainy day if judiciously handled. When we take into con-

sideration the many disadvantages which beset the professional over the average business man, is it to be wondered at that the cases of dependency are so numerous? With perhaps the exception of the lawyer, the average professional man is not possessed of the business judgment which enables him to see and grasp a business opportunity, and it is therefore all the more necessary for him to practice the most rigid economy and thrift. I know of no better illustration of lack of judgment than that which has been displayed by the profession in general in refusing to avail itself of the protection offered by the Dental Protective Association, which organization has done more from a financial standpoint for the profession than any other one thing of which I know.

Let us consider some of the disadvantages of professional men, which may, I believe, in a great measure be overcome if proper efforts are put forth. 1st. Lack of early education. The average dentist goes from the local school into a college, and out of the college into practice, without having had an opportunity to acquire an education along business lines.

2nd. Neglect to keep properly books of accounts. The majority of the profession simply keep an appointment book and a memorandum of operations performed, and I venture to say that not twenty per cent of us can refer to our books at the end of the month and determine at once where we stand in the matter of unsettled accounts, or as regards income and expenditure relating to the practice of our profession.

3rd. The prevalent custom of carrying patients anywhere from a month to years. I know many members of the profession who never dream of sending a bill or rendering a statement to their patients. In fact, it would seem that the majority do not expect to have a settlement of accounts with most patients inside of six months or a year, and many are surprised if they get a settlement even then. In short, the settlement of accounts is left almost entirely to the pleasure of the patients, as the dentist does not seem to think it ethical to look after his own business interests.

4th. In purchasing supplies the custom prevails of buying little items and not in quantities sufficiently large to get the advantage of discounts offered. In other words, the matter of discounts is Greek to the average dentist.

5th. Diligent Study. In order to keep up with the rapid prog-

ress of the profession to-day it is necessary that much time be given to reading and original research. My judgment is that the members of the dental profession are not inferior in business capability to the members of any other profession, and I therefore offer the suggestion, that a remedy for some of the existing ills may be found by giving heed to legitimate business methods, and doing away with the old-fashioned and decidedly ridiculous ethical contention that a discussion of business methods should not be permitted in society meetings, to say nothing of applying them in our practice. I am casting no reflection on ethics, as I am heartily in favor of same under proper circumstances and conditions. It is rather the abuse than the use at which I am aiming, for anything can be overdone. Let us take a common-sense view of the proposition.

The practice of dentistry is not to-day what it was fifty, twenty-five, or even five years ago. We are improving our methods and acquiring new knowledge every day. Unselfish students have sacrificed themselves to acquire the knowledge that is to-day of inestimable value to every member of the profession. Along the line of original research it has always been necessary for the dentist to give the matter personal attention without the thought of compensation entering into consideration. We have had no colleges founded nor chairs endowed for such purposes, and it has therefore been only by the most laborious efforts that any new truth has been discovered or advancement made. In nearly every other walk of life either chairs have been endowed or experts have been employed to make investigations along the desired lines.

Our patients are the ones who reap the principal benefits, but it seems to me about time that the members of the profession themselves reap largely of the benefits, and have something substantial in the way of this world's goods at the end of the hard fought battle. This we cannot do until we apply the same rules in the conduct of the business side of our practice that the ordinary man does in his business. We do not expect that our merchant will extend to us a line of credit unlimited not only in volume but in time of settlement, and if after thirty or sixty days we did not settle with him we would expect him to have just cause for complaint. As for us, however, after having devoted hours of our valuable time, which is our stock in trade, I venture to say that at

least seventy-five per cent of us will make a memorandum of operations and let the account run from six months to a year. Can we expect to maintain a good standing in our community, to say nothing of our relations to the supply houses, if we do not look more closely to our collections? It has been truly and wisely said, "God helps him who helps himself."

The size of one's income should have no effect whatever on his conduct of affairs, for it is with this generation, as it ever has been, that as our income increases our demands will increase, and unless thrift has been practiced the increasing desire will consume the enlarged income. Improvidence seems to be one of the most incorrigible of faults, and I believe it can be indulged in to the extent of becoming a sin.

I insist that while we should always be mindful of the ideals of our profession, which will permit us to refer with pride to our calling, we should be fair with ourselves and our families, and exhibit at least a slight familiarity with the rules which govern the business side. In handling professional accounts apply every just rule that is used by any good business concern in the settlement and collection of accounts. Take advantage of every discount offered by the supply houses. Buy for cash, and whenever possible sell your services for cash, always of course exercising judgment. I do not refuse business simply because the patient does not have his check book with him. While I endeavor to give my patients the very best service, I expect them to recognize such service by prompt settlement of their accounts.

When I first began practicing dentistry I did not keep books. For the first two or three years what little practice I had might have been worth a few hundreds or many thousands of dollars—I did not know, but there came a day when I was compelled to make inquiry into my financial situation, and after doing so I assure you there was an immediate and radical change in the methods I had formerly pursued. I opened a business set of books and pursued the same methods that are employed by any other business house. I have lost some patients, but have never regretted their loss. I have long followed the plan of keeping appointment, day and cash books, and accurate records of all operations performed, so that I can at any time without the least trouble refer to the transaction of any date. I send every patient

each month a statement of account. I expect a settlement each month in every instance where work is completed. I am not unreasonable in this, nor am I harsh with the patient who does not settle on the dot. It is always well to be just, but you will agree that there is a difference between the reasonable application of business principles and a failure to apply business rules of every kind or character.

DISCUSSION. *Dr. G. H. Henderson,* Springfield, Ill.: Every dentist should keep a record of all operations, as it inspires confidence in the patient of the honest intentions of the operator. When a patient has visited several dentists the last one gets the blame for the failure of any operation, but when that patient knows you keep a record of his case he will not be so apt to censure you. It therefore follows that individual records save the operator from any unjust criticism of this kind.

One of the troubles in dentistry is at the beginning. The matriculation examination of students into our colleges is altogether too low, and we should as a profession unite in demanding a higher standard of entrance. A man who is well educated can more readily grasp either business or professional ideas than if he has only the minimum standard of matriculation demanded by our colleges. A good business college training would be beneficial to any professional man.

Students should be compelled to spend all the time between sessions either in the college infirmary or with a reputable dentist. They would then be in a position to become acquainted with the everyday business aspect of professional life. Working on a farm or holding some clerical position during the summer months does not tend to improve a student from a professional standpoint.

Dr. C. N. Johnson, Chicago: I am very glad Dr. Pearce has brought this subject before our society. I often think that dentists are derelict in a certain duty which seems to me a fundamental duty of humanity and citizenship. I take it that every man of responsibility owes it to himself and to the commonwealth in which he lives to provide for his declining years while he is still in the full vigor of manhood. In a profession like dentistry a man is likely to grow old quite young; that is, he loses his capacity for earning earlier in life than most men, and every young practitioner should remember this and profit by it. There is to me,

as I have frequently stated, no more pathetic spectacle in the ordinary experience of professional life than an aged practitioner incapacitated for earning a livelihood and yet confronted with the grim necessity of doing so.

The essayist truly says that many of our young men enter the profession without the requisite business training to enable them to properly conduct a practice from this point of view, and I have for some years recognized the necessity of giving a few lectures on this topic to senior students just previous to their graduation. We owe it to our young men to round out their education in every conceivable way, and while the commercial should never be emphasized beyond the professional, yet a due regard to the necessities of correct business methods should not be ignored in instructing the prospective dentist.

With regard to the question of collecting accounts, I am in the main in accord with the essayist. It is undeniable that most professional men are notoriously bad collectors, but I think there is a reason for this aside from the temperament or disposition of the man himself. Professional service is something apart from barter in goods, and while I am strong in my conviction that the laborer is at all times worthy of his hire, yet we must recognize the fact that in professional life contingencies frequently arise which place a patient under a financial obligation to a practitioner in a way altogether different from a similar obligation in commercial life. If an individual wishes to buy a new suit of clothes he can usually manage to get along with the old ones till he has the money for the new, but if the same individual is taken ill or has the toothache he cannot wait till his purse is in condition to pay for the service. So we occasionally find the best of people under obligation to us in emergencies, and this should be borne in mind in collecting accounts.

The great evil, however, lies in the fact that many professional men conduct their affairs so loosely that the impression goes out among the people that professional liabilities are not so binding or tangible as commercial liabilities, and so are the last to be met, if met at all. This should be corrected, and it remains for dentists to so conduct the business phase of their practice that the public will soon learn that a dental bill involves as urgent and legitimate an obligation as any other.

ADVANTAGES, DISADVANTAGES AND PECULIARITIES OF INLAYS.

BY W. H. TAGGART, D.D.S., CHICAGO. READ BEFORE THE ILLINOIS STATE DENTAL SOCIETY, AT PEORIA, MAY 10-12, 1904.

It is just a year since I talked to you about inlay fillings and gave you what I considered encouraging words in regard to the principles underlying this most excellent way of filling teeth badly decayed or of low grade. My experience in the past year, and close observation of the work done by others, permit me to honestly indorse the inlay principle, and I hope by my enthusiasm to encourage those who are not satisfied with their results and inspire those who have not attempted the work to take it up and give their patients the beautiful results to which they are entitled. When I first attempted to do porcelain inlay work it was for esthetic effects solely, and for those patients who fully understood from my explanation that if it gave way in a year or so they could have it renewed, and in the meantime enjoy the pleasure of having sightly looking teeth. Owing to lack of skill and crude methods the results were not always so satisfactory from the esthetic standpoint as I could have wished, but with all the faults they were infinitely more artistic than conspicuous gold fillings. As time went by these apparently imperfect inlays proved to be saving the teeth, gradually I grew to have confidence in them, and now can heartily praise them for their artistic and saving qualities.

Those of you who have not taken up this work or have done but little of it should not denounce it, for the average patients nowadays are fairly well informed in modern dentistry and will meet enough friends who are satisfied with inlay work to win them over to the modern method and leave you wishing you had not said so much against a good thing. There are some dentists to-day who even cry down continuous gum dentures, and because of lack of ability and artistic sense try to make themselves as well as their patients believe that the plate is too heavy, and that, if broken it cannot be repaired, when as a matter of fact there is no plate made which can come so near filling the bill in simple as well as difficult cases as one of continuous gum. When the patient discovers this by experience gained in the hands of another

dentist, has the man who condemned a good thing gained anything or raised himself in his own estimation?

As time has a tendency in our landscape to smooth off the excessively sharp and jagged points of the mountain and to build up the low lands, so time is having its leveling effect in porcelain art as applied to dentistry. The extremist is having some of his sharp and jagged opinions mellowed and smoothed by time, the man who has been below the level is gradually adding to his knowledge, and we will shortly reach the happy land where traveling will be smooth. The "high" and "low" fusing extremists are gradually becoming a thing of the past, but as there will always be those who will not give up their cherished opinion, do not wait until it is all settled or you will never get started. The extremist who insisted on burnishing his matrix and the one who made his matrix by the swaging process are having their opinions mellowed by time. The burnishing man admits he uses the swaging process when he packs cotton or other materials into the matrix, and the swaging man admits that he burnishes when he uses an instrument to rub out the wrinkles. Again I say, however, get into line, and get the pleasure of having this mellowing and smoothing influence of time knock off some of your high points and fill up some of your deficient places, or you will not be in a position to recognize the good when you have the opportunity, and will be in the condition of the negro who asked the philosopher, "Where am dat happy lan'?" Uncle Eben replied, "It am de place you passed long years ago and didn't know dat was it."

In reference to the materials to use in porcelain work, whether high or low fusing, I say use either, or better still, use both. In years gone by I was called a high-fusing man, but principally because the low-fusing porcelains, or rather glasses of Timme and Downie, gave such poor results, whereas now the porcelain enamel of Jenkins and the Brewster low-fusing porcelain are as good in the places where I use them as are the high-fusing porcelains in their places. Where I have a contour to restore I use the high-fusing, because it retains its shape better during the fusing process, and where I have a cavity the matrix of which is to be just flush-full I use the low-fusing, because it has a tendency to flow and fills the matrix more readily, but as to edge strength and color I make no difference between the high and low-fusing porcelains.

Since the introduction of the Mellersh cores it is possible to get contours much more readily, and I hope that, as these cores are at present made only for central and lateral contours, the inventor will give us something for bicuspids and molars.

My position as to the relative merits of the burnishing or swaging process for procuring a matrix is this—for the smaller and simpler cavities I prefer the burnishing method, but where the cavity is large and complicated and has surfaces at different angles, with the addition of running well under the gingival margin, I much prefer the swaging process, because it looks like a better mechanical principle. I will admit that up to the present time the getting of a correct impression of such a cavity was no easy matter, but I am glad to be able to simplify this for you. Having plenty of space between the teeth, and using a flat matrix of No. 27 brass plate, it is no trouble to get a fairly accurate impression of the most difficult case with pink base-plate gutta-percha. I use this because it stays plastic long enough to enable one to get it to place well under the gum. When it is fairly well pushed to place with a large burnisher I place on the exposed surface of this gutta-percha another flat piece of brass No. 27 the size of the matrix between the teeth, and put pressure on this. In this way the whole mass is pushed to place. Then cool this with ice water or chlorid of ethyl spray, and remove it from the cavity. We now have a fairly accurate impression, but the danger of distortion in removing or in subsequent handling is great. I next trim this gutta-percha impression, either with shears or a very hot spatula, until all the excess except about a sixteenth of an inch from the cavity margin is removed, then paint the cavity with vaselin, mix cement to a medium consistency, place it on the gutta-percha impression, and push it to place in the cavity. Hold it in place with an instrument or the finger and scrape off the excess cement even with the gutta-percha. We now have a cement impression of a very difficult cavity, with no undue amount of cement overhanging the edges to prevent removal, and with the certainty that the inaccessible part of the cavity has been reached. When the cement is hard remove the impression from the cavity and invest it in plaster, leaving the plaster standing well up around the impression so as to have a depression, into which pack cement or amalgam. I prefer to use amalgam, as I am more certain, on account of the

way it can be packed into this impression, that every part is properly filled. After the amalgam is hard break the plaster away and warm the gutta-percha slightly and remove it. Now place the amalgam mass with the cement attached in ammonia water and leave over night, and the cement will be dissolved away with no danger of injuring the finer lines and frail corners of the amalgam die, as would happen if you tried to separate the two materials by any other method. This sounds like more of a process than it really is, but after you have tried it a few times you will appreciate the fact that there is no guesswork about it, and after you have this accurate duplicate of the cavity you will begin to gain time in making your matrix, and if you meet with any accident in making your inlay you can go back to this die and duplicate it with very little trouble. The swaging is supposed to be done with a Brewster press or Ash & Sons' water-bag swager. One of the strongest points in favor of this swaging process is that the matrix can be taken off and annealed and reswaged several times, and in this way get all the spring out of the metal, so that when the porcelain is baked in it the molecules of metal do not have to rearrange themselves, consequently there is less danger of warpage.

Porcelain work is no lazy man's task. Go at it with all your might, and when you begin to be satisfied with the results it will be time for you to die, but you can die with the feeling that you have tried to be an up-to-date dentist.

DEFECTIVE LATERAL INCISOR AND HARELIP.—Mr. C. R. Lucas claimed in 1888 that congenital absence of lateral incisors was an indication of harelip or cleft palate in a successive generation. Since then he has twice noticed this association, and recently exhibited photographs and drawings of the teeth of a mother, showing the defective lateral incisor, the first and only child of this mother having harelip.—*Record.*

OSTEOPERIOSTITIS OF THE SUPERIOR MAXILLARY.—Pont and Leclaire cite a case in which the abnormal persistence of the temporary molars had excited rather serious symptoms of periostitis and osteitis. This condition was found to be due to the unusual shape of the secondary teeth, which were seeking to push their way through, and which were found to have their customary circumferences as to crown and root reversed. This condition may not be unusual, and dentists or physicians who are consulted regarding the delay in the appearance of the permanent teeth may well take it into consideration. —*N. Y. Med. Jour.*

Digests.

BONE-CYSTS: A CONSIDERATION OF THE BENIGN AND ADAMANTINE DENTIGEROUS CYSTS OF THE JAW AND BENIGN CYSTS OF THE LONG PIPE BONES. By Joseph C. Bloodgood, Baltimore. Read before the Section on Pathology and Physiology, American Medical Association, June, 1904. [Cuts kindly loaned by the *Journal American Medical Association*, from which the article is reprinted.] Recent accumulated experience, in the ultimate results after amputation for sarcoma of

Fig. 1. Characteristic shadow thrown by any medullary tumor which in its growth produces a shell of bone. A pathologic fracture is also seen.

the long pipe bones, and complete resection for sarcoma of the upper and lower jaw, has demonstrated that local recurrence is unusual, but death from internal metastasis is common in a certain number of cases. When these cases are studied pathologically it is found that the patients who have remained well suffered from special types of sarcoma essentially different from the tumors removed from the patients who ultimately succumbed to internal metastasis. In other words, we were not accomplishing a cure in the latter group of cases even after amputation at the highest joint, because internal metastasis takes place early and is present at the time the patient seeks surgical treatment, and we were subjecting the first group of patients to an unnecessarily extensive operation.

In 1899 I discussed the literature and the experience of the surgical clinic at the Johns Hopkins Hospital in regard to the different relative malignancy in sarcoma of bone, and that in certain varieties much less extensive operations would accomplish a cure with as great a certainty as amputation at the highest joint. Experience has demonstrated that in some cases curetting is sufficient; for example, the benign bone-cysts of the long pipe bones, dentigerous cysts of the jaw, and medullary giant-cell sarcoma. The latter was advocated

Fig. 2. Bone-cyst of lower end of femur of four years' duration.

many years ago by Koenig. In other cases resection is indicated, the extent of which is determined by the local infiltration of the disease. For example, the various forms of epulides of the upper and lower jaw; the periosteal and medullary giant-cell sarcoma; the periosteal fibrosarcoma and osteosarcoma; the myxochondrosarcoma and a special tumor of the jaw—the cystic adamantine epithelioma. Such local resections as against amputations have been advocated by von Mikulicz, Weisinger, Morton, Karewski, Hinds.

Amputation is indicated in these varieties of sarcoma only when the necessary resection would result in a useless limb. Infiltration

of muscle is not a positive indication for amputation. In this group of cases amputation at the highest joint, except due to the position of the tumor, is never indicated. In April, 1901, I advocated this more conservative procedure. Since then the further experience of Dr. Halsted's clinic and my own and the reading of the literature have accumulated additional facts justifying the more conservative operation in this group of sarcoma of bone of relatively low malignancy. In December, 1902, I removed with the curet a large medullary giant-cell sarcoma filling and expanding the upper third of the tibia. This patient gives no evidence of recurrence and has a limb with unimpaired function.

The experience of the surgical clinic in tumors of the jaw and long pipe bones can be expressed in a few words. In Group 1 the

Fig. 3. Bone-cyst of upper portion of femur. Dr. Halsted's case.

patients have remained well since operation, the time varying from six months to twelve years. There has been a slight operative mortality, and a few cases in which, on account of the size and position of the tumor, the disease was considered inoperable.

Benign Cysts of Long Pipe Bones.—Three cases; one died after operation (Fig. 2); two cases are well. *Benign Dentigerous Cysts.*—Ten cases (upper jaw, four; lower jaw, four; ethmoid, two). Inoperable, no cases. Death after operation, two cases (Figs. 5 and 6). In these two a complete resection was performed. Well, eight cases. In these eight the operation consisted in partial removal of the bony wall, curetting and packing. *Adamantine Epithelioma.*—Twelve cases; inoperable, one case (Fig. 8). Death after operation, one case (Fig. 9). Well, ten cases. In one instance there was a second operation for local recurrence; this patient has remained well eight years since the second operation.

PERIOSTEAL SARCOMA.

Epulis.—Twenty-three cases; upper jaw, thirteen; lower jaw, ten. One patient died of pneumonia; in this case, an extensive giant-cell tumor of the lower jaw, it was necessary to do tracheotomy and perform a complete resection of the jaw. Well, twenty-two cases. In all of these cases the operation consisted of removal of the tumor with the alveolar border of the jaw. In only one case was there a local recurrence, and this patient has remained well since the second operation.

Spindle-Cell Fibrosarcoma or Myxosarcoma.—Eight cases; an-

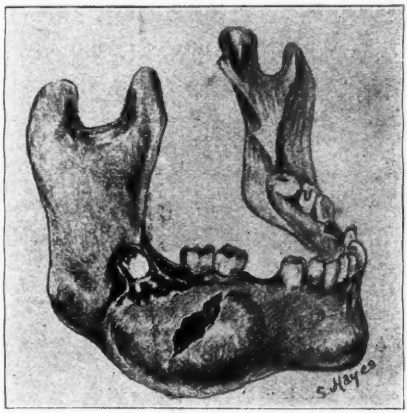

Fig. 4. Sketch of reconstructed lower jaw in a case of dentigerous cyst. The expansion of the body, chiefly on the outer side, is well shown, also the recess containing the non-erupted third molar.

trum, three, all well; lower jaw, three, two well, one died of pneumonia after complete resection; orbit and antrum, two cases; one, a young child, died after an extensive operation; the other, also a child, has remained well since the less extensive operation, two years.

Osteosarcoma.—(I employ the term osteosarcoma only in those periosteal tumors in which new bone formation predominates.) Eight cases; lower jaw, four, two well, two refused operation; upper jaw, two, both well; long pipe bones (humerus and fibula), two, both well.

Giant-Cell Sarcoma.—Those situated on the jaw and called epulis have already been considered. It is a rare tumor of the long pipe

bones. I have observed three cases: Ulna, one case, resection, well twelve years. Tibia, upper third, two cases, both well; in both the tumor was recurrent; in one the tumor was excised without destroying the continuity of the tibia, in the other the limb was amputated at the thigh.

MEDULLARY SARCOMA.

Giant-Cell Tumors (Myeloma).—Eight cases, all well; lower jaw, one; long pipe bones, seven. *Myxochondrosarcoma.*—Three cases; one involving the sacrum, inoperable; one involving the upper third of the humerus, well; one of the femur, death two years after operation from tuberculosis of the lungs.

Seventy-eight bone tumors in this group are either benign or of

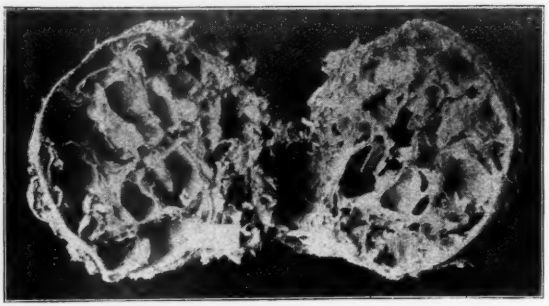

Fig. 5. Photograph of the alcohol specimen of an excised lower jaw, in which the dentigerous cysts are multiple.

relatively low malignancy. Sixty-nine cases are well, two inoperable; two refused operation; seven died after operation. In six of these cases the tumor involved the upper or lower jaw. In these six cases I believe a less extensive operation could have been performed which would have reduced the dangers of the operation, but not the probabilities of an ultimate cure.

Group 2 includes patients who have not been cured, either because the condition was inoperable when they presented themselves at the clinic, or because of death from internal metastasis after operation.

PERIOSTEAL TUMORS.

Spindle and Round-Cell Sarcoma.—Six cases; lower jaw, two; long bones, four. *Perithelial Angiosarcoma.*—Long bones, two cases.

MEDULLARY TUMORS.

Spindle and Round-Cell Sarcoma.—Long bones, four cases. *Perithelial Angiosarcoma.*—Long bones, two cases. In these fourteen cases a complete operation was performed. In the twelve cases of the long pipe bones a high amputation; in the two jaw cases an extensive resection. In every case death has taken place, usually within a year after the first symptom of the tumor. In only one case was the duration of life longer than two years. *Sarcoma of the Upper Jaw Involving the Antrum.*—Clinical diagnosis: Six cases, all inoperable. *Carcinoma of Upper Jaw.*—Twenty-one cases; inoperable, sixteen; one death of pneumonia; remainder not cured.

We have therefore observed forty-one cases of tumors involving bone of a relatively high malignancy, none of which has been cured,

Fig. 6. This illustrates the huge size which a dentigerous cyst of the upper jaw may reach.

as compared with seventy-eight of a relatively low malignancy, of which sixty-nine are well. These facts demonstrate the hopelessness of the more malignant varieties of bone tumors.

Surgeons who take the view advocated in this paper must educate themselves to recognize clinically, or through the Röntgen negative, or at the exploratory incision, the different varieties of sarcoma of bone, and govern the extent of the operative procedure by the relative malignancy and extent of the tumor. In this paper I shall discuss only the benign bone-cysts of the long pipe bones, the dentigerous cysts of the jaw, and the cystic adamantine epithelioma.

Benign Bone-Cysts.—The benign bone-cysts of the long pipe bones are rare tumors. Up to the present time we have observed

but three cases in the surgical clinic. CASE I.—Bone-cyst of the humerus. White girl, aged seven, tumor one year, pathologic fracture. Operation, curetting and drainage, June, 1904, ten months, well. I saw this patient in August, 1903. The parents gave the following *history*—The apparently healthy child one year ago fractured the upper third of the humerus of the right arm after a slight fall. The fracture was treated by their family physician and united. After the dressing was removed a swelling was observed which had never disappeared. If the swelling was present before the fracture it did not attract the attention of the parents or the physician who treated the fracture. For a year there were absolutely no symptoms except swelling. Three days ago, after a very slight fall, the child refused to use the arm

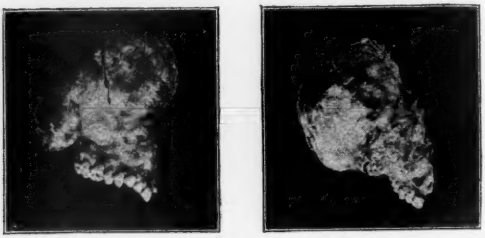

Fig. 7. Photograph of the alcohol specimen of Fig. 6 after removal.

because of pain, and for this reason was brought to the surgical clinic.

Examination.—On examination there was a fairly uniform expansion of the upper third of the humerus, easily seen, greatest toward the surgical neck. On palpation the soft parts were normal, but one could feel the normal shaft of the humerus expanding into a thin shell of bone. The surface of this shell of bone was not smooth like the normal shaft, but irregular. In a few places one could elicit definite parchment crepitation, first described by Dupuytren, or what I have called "ping-pong ball" crepitation. The arm was very tender. Clinically, a diagnosis of bone-cyst was suggested, because so far in my experience every sarcoma of the more malignant type in children at this age had caused death by internal metastasis within a year.

The only medullary tumors of the long pipe bones which in

their growth expand the bone and produce a definite shell are the bone-cysts, the myxochondrosarcoma and the giant-cell sarcoma. Of the latter two we had no observations in the clinic in patients at this age, and so far I have been able to find none in the literature. The Röntgen negative is illustrated in Fig. 1.

Operation.—At the exploratory operation the tissues were normal until the periosteum was separated. The bone beneath was irregular and varied in thickness from 1 to 4 mm. On removing a piece of the shell of bone a cavity was exposed filled with blood; there was no connective tissue lining, and no evidence of cartilage, but as only sufficient bone was removed to allow curetting of the cavity, one cannot exclude the possibility that cartilage was pres-

Fig. 8. Colored man, aged fifty-four; tumor of twenty years' duration.

ent in some part of the wall. After curetting the cavity was partially packed with gauze, the remainder allowed to fill with blood-clot. Eight weeks after operation an X-ray picture demonstrated that the cavity was almost completely filled with new bone.

The origin of these bone-cysts has been demonstrated by Virchow, Zeronie, Schlange, Koenig and others to be due to liquefaction of misplaced islands of epiphyseal cartilage, and in the majority of cases cartilage has been found in some parts of the wall. In the two other cases observed in Dr. Halsted's clinic cartilage was demonstrated in the wall of the cyst.

Case II.—Colored woman, aged thirty-seven. Expansion of the lower end of the right femur, four years. *History.*—The swelling shown in Fig. 2 reached its greatest height about one year after

the onset, and during the last three years there has been little or no increase in size. This patient refused amputation. Five years and eight months later she returned to the clinic.

Examination.—The tumor had increased in size, but had not changed its characteristics. The shell of bone was rough, similar to Case I, but thicker, and one could not elicit parchment crepitation. The X-ray showed a shadow somewhat similar to Case I. The diagnosis lay between a bone-cyst and a myxochondrosarcoma. The long duration and the preservation of the shell of bone excluded a malignant bone tumor.

Operation.—The findings at the operation by Dr. Follis were similar to the case just discussed, except that cartilage was present within the shell of bone in many parts of the wall.

CASE III.—The age, clinical history, appearance and X-ray shadow were almost identical in this patient with Case I, except that the first pathologic fracture had been five years instead of one year before the patient came under observation. The expansion of the upper two-thirds of the femur in this case was produced in the upper portion by cartilage, in the central portion by a cyst filled with blood, and in the lower portion by a fibromyxomatous connective tissue which extended down the medullary cavity of the femur some distance below the point of its expansion (Fig. 3). Dr. Halsted exhibited this patient and the specimen at a recent meeting. Later a detailed report, with the interesting histologic findings, will appear. The extensive formation of fibromyxomatous connective tissue histologically like ostitis fibrosa, described by von Recklinghausen, I think is a unique finding in both cysts.

Koch gives the most complete *résumé* on the subject of bone-cysts, collecting from the literature, in addition to his one observation, twenty-two cases. Heineke has recently published the first case of multiple bone-cysts in which X-ray negatives were made. He is inclined to the conclusion that the cystic degeneration is part of a general osteomalacia. I have recently learned that Dr. Goldthwaite in Boston has under observation, confirmed by X-ray studies, a similar case of multiple bone-cysts, in which there is no doubt clinically as to the presence of osteomalacia.

The etiology of these multiple cysts is apparently entirely different from the single cyst, but in every case numerous X-rays should be taken to exclude multiple cysts. Codman in Boston reports a

very interesting tumor in the digital phalanx which undoubtedly represents the cartilage stage of the benign bone-cyst.

The benign cyst of the long pipe bones cannot always be recognized clinically, nor does the X-ray negative differentiate it from medullary giant-cell sarcoma or the myxochondrosarcoma. As a rule these three tumors can be distinguished from the more malignant and rapidly-growing medullary sarcoma. However, if there

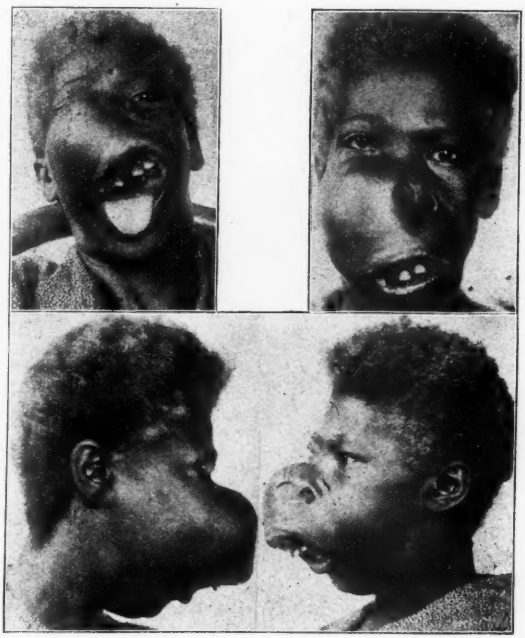

Fig. 9. Dentigerous cyst of upper jaw. Death followed complete excision.

is any doubt one should never proceed with an amputation without excluding these tumors of less malignancy by an exploratory incision.

Benign Dentigerous Cysts.—Ten cases. Upper jaw, four cases; lower jaw, four cases; ethmoid, two cases. The age of the patients varied from six to thirty years; four were under fifteen years of age, six between twenty and thirty. The duration of the

tumor varied from three months to thirteen years. Whether the tumor is situated in the upper or lower jaw it is of slow growth and usually painless. There is a slow expansion of the jaw, and on palpation one can feel a smooth, thin shell of bone. Usually there is parchment crepitation. At the exploratory incision the periosteum is normal. The outer shell of bone is smooth; lining the bone there is a thin, vascular connective tissue membrane. The contents of the cyst are usually a blood-stained serum. Microscopically, one finds

Fig. 10. Photograph of resected lower jaw.

frequently cholesterin crystals, blood-corpuscles, and degenerated cells, which suggest epithelium. Histologically, however, I have never been able to demonstrate an epithelial lining. Usually the cyst is single; now and then there are thin partitions. In a few cases the cysts are multiple. Complete resection is unnecessary. Partial resection with curetting and drainage will accomplish a cure. In three of our cases a non-erupted tooth was found in a recess of the cyst. These dentigerous cysts are apparently due to the distension of the connective tissue capsule of a non-erupted tooth.

CASE IV.—Fig. 4. The patient was a white boy, aged fifteen. *History.*—The swelling of the body of the lower jaw was of three months' duration. Because of the painless and uniform expansion, the distinct shell of bone, and parchment crepitation, I made the diagnosis of a dentigerous cyst. *Operation.*—The exploratory incision revealed the pathologic findings already described. The outer expansion was cut away with the chisel without destroying the continuity of the lower jaw. The connective tissue membrane and tooth were removed. The bone cavity was then curetted, allowed to fill with a blood-clot, and the skin incision closed. The wound healed *per primam.* June, 1904, six years after operation, there is a slight depression in the jaw at the site of the scar, but no other deformity.

Fig. 11. Patient from whom tumor shown in Fig. 10 was removed.

CASE V.—Fig. 5. The patient was a white girl, eight years of age, the tumor of some years' duration. *Operation.*—Complete resection was done. The child's hemoglobin was but fifty-two per cent at the time of operation, and although there was no loss of blood the patient died of shock. The tumor was a very large one and extended from the zygoma almost to the symphysis of the jaw. I believe incision and curetting would have been sufficient in this case.

CASE VI.—Fig. 6. The patient was a colored girl, nineteen years of age, the tumor of thirteen years' duration. Complete resection was performed (Fig. 7). The patient died at the end of the third week from abscess of the lung.

In the remaining five cases of dentigerous cysts, two of the upper jaw and three of the lower, the operation was similar to that followed

in Case IV. The patients recovered and have remained well for from two to eight years since operation.

The two cases of cysts of the ethmoid bone presented themselves clinically with a tumor projecting from the angle between the nose and the supraorbital ridge, producing slight exophthalmos. On palpation the tumor was smooth and presented a thin shell bone giving parchment crepitation. In both partial excision with curetting

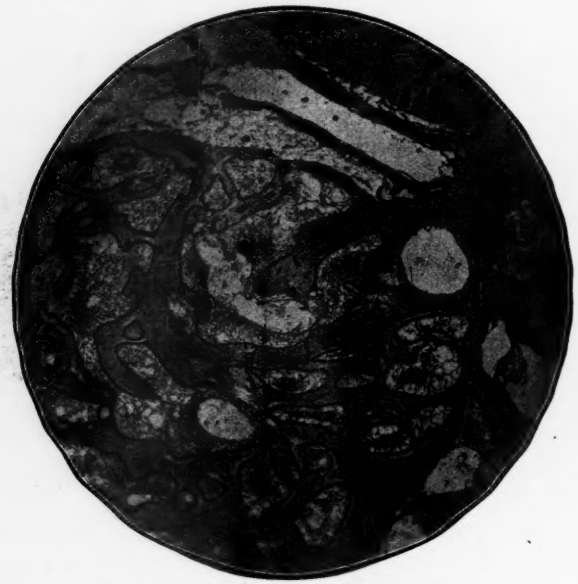

Fig. 12. Microphotograph of a section of an adamantine epithelioma, involving chiefly the alveolar border of the lower jaw. In this section the basal columnar cell and its various morphologic changes towards the center of the alveolus are well shown. (Sent me by Dr. Steensland.)

and drainage was performed. The patients have remained well, one four years and the other eighteen months since operation.

Adamantine Epithelioma.—Of this there were twelve cases. In four the tumor projected from the alveolar border of the jaw (three lower, one upper). The tumor was covered with normal mucous membrane and did not invade the bone. In eight cases the epithelial tumor was situated within the body of the jaw (one upper and seven lower), and in its growth produced an irregular expansion very

similar to a dentigerous cyst. The age of onset varied from eighteen to sixty-one years. The majority of cases were twenty and thirty-five years of age; the duration of the tumor from seven months to twenty-nine years, the majority from six to twenty years. In one case the condition was considered inoperable (Fig. 8). In the remaining eleven cases a complete resection of the diseased area was made. Nine cases have remained well for from one to twelve years. In one instance there was a local recurrence, but this patient has remained well eight years since the second operation. One patient (Fig. 9) died after complete excision of a huge tumor involving both upper jaws.

Fig. 13. Microphotograph of a section of an adamantine epithelioma of the gum.

This epithelial tumor is apparently of a very low grade of malignancy. In none of our cases was there metastasis to the glands of the neck. The tumor can be differentiated from the more malignant neoplasms of the jaw by its very slow growth. The adamantine epithelioma involving the alveolar border cannot always be differentiated clinically from the connective tissue epulis. The epulis is

more apt to be associated with ulceration of the mucous membrane. When the adamantine epithelioma originates in the body of the jaw and produces expansion, with the formation of a thin shell of bone, it cannot be differentiated from a benign dentigerous cyst until the exploratory incision is made. Then, when the shell of bone is incised, we do not find a cavity, but a white, finely granular tumor containing connective tissue trabeculæ, and usually many small and large cystic cavities. The gross appearance is well illustrated in Fig. 10. This patient (Fig. 11) was a colored man, forty-two years of age, tumor of eight years' duration. The patient has remained well three years since operation. The microscopic appearance is well illustrated in Fig. 12.

CASE VII.—Fig. 13. The patient was a white woman, aged fifty-two. *History.*—Four years ago she observed a tumor like a gumboil on the outer side of the alveolar border of the left lower jaw, opposite the cuspid and first molar teeth. At the end of two years, when it had reached the size of a hickory-nut, it was removed. A local recurrence took place within six months. *Examination.*—The recurrent tumor is the size of an egg and involves the alveolar border of the left lower jaw from symphysis to within one centimeter of the angle. The tumor is present on both sides of the alveolar border. It is distinctly circumscribed. The mucous membrane at one point has ulcerated, exposing a small cyst. *Operation.*—The tumor was removed by turning back flaps of mucous membrane which were not adherent to it. Then the tumor and the alveolar border of the jaw were removed in one piece. The patient has remained well since the operation, a period of ten years.

Appearance of Tumor.—The fresh appearance was quite typical: white, friable, granular alveoli of various sizes and cysts in a definite fibrous stroma. Under the microscope (see Fig. 13) one sees the normal mucous membrane of the gum, then a zone of connective tissue, beneath which is the circumscribed tumor. The tumor is composed of branching epithelial alveoli in a connective tissue stroma. Some of the alveoli are cysts lined by the typical basal adamantine epithelium. Other alveoli are solid, with cells showing the various morphologic changes of the adamantine epithelium.

SHOULD THE DENTAL PRACTITIONER CONCERN HIMSELF WITH THE CHEMICAL EXAMINATION OF SALIVA AND URINE?

By H. Carleton Smith, Ph.D., Natick, Mass. Read before the American Academy of Dental Science, Oct. 5, 1904. Unless I am mistaken an unqualified affirmative answer to this question would meet with considerable objection. The reasons given might be, first, that such examination is not practicable; second, the information so gained may be better obtained in some other way; third, such information has slight bearing upon the problems and conditions constantly presenting themselves to a busy dentist. The first objection of non-practicability is valid only to a limited extent, and the difficulty here is not so much in making the analysis as in getting the samples to analyze. Under the existing social and professional usages we can imagine circumstances when it would be a little hard for a dentist to secure samples that the physician asks for almost from habit, but this would pass. The second objection of better ways to the same end has but little truth behind it, and that little is constantly decreasing as we learn better and more complete methods of chemical investigation. The third objection is a reasonable one and merits our consideration; we might take it for our topic and restate the question for discussion: "Is a knowledge of the relationship between the chemical constituents of urine and saliva and the diseases of the oral cavity of practical value?"

I am a firm believer in the soundness of deductions from analogies. I believe in the first part of the theory of evolution because the last part is before our eyes, and because the threefold nature of the material world and the threefold nature of man are so plainly manifest I claim a foundation for and a right to believe in the threefold nature of some other things concerning which we have less positive material evidence. So from among the lesser things of this class I would call attention to the threefold nature of dental disease, or better, of the three causes of dental disease which are not nearly so independent as they may at first seem.

Disease may be due, first, to an influence wholly external to the tissues involved, which we may regard as a mechanical or, in a restricted sense, a chemical cause, as mechanical abrasions or chemical erosion. This is perhaps the least important and appears as a primary factor in the smallest number of cases. Second, to the growth of

specific foreign organisms, bacteria, fungi, etc., which is also chemical and may be both external and internal as regards the tissue involved, and third, to malnutrition of the part which is a factor, perhaps in some instances secondary, but nevertheless a factor in *every* disease the nature of which is in any degree chronic.

Let us neglect the first two and for a little consider the third part of the proposition before us. Malnutrition is not necessarily *lack* of nutrition, but often the wrong kind of nutrition; that is, the blood may be abundantly supplied with all the essentials to a vigorous maintenance of its physiological integrity, but the proportion of acid-forming elements may be in excess of the normal, the chemical equilibrium is disturbed, and conditions are produced favorable to the development of dental disease—pyorrhea, for instance. Again, there may be a very evident lack of some particular tissue constituent, such as the phosphates, and for some reason the phosphates taken into the system with a view to the correction of such lack pass into the feces with but very slight absorption. A case of precisely this kind came to my knowledge last winter.

Now, is a knowledge of conditions such as these of value to the dentist? It seems to me so, especially if he realizes that his profession is not a trade, but a specialized department of medicine, as is surgery, or bacteriology, and in no way inferior to them or to medicine itself in its opportunities for profound scientific investigation or in its demand for an ability to draw *correct* conclusions from observed phenomena. If there are diseases of the oral cavity which a dentist is expected to treat, and which may have their etiology in some systemic derangement not easily apparent, then in such cases it becomes the business of the practitioner to inform himself as thoroughly as possible as to the exact conditions existing in the patient's system, and more than this, as to the tendencies or "diatheses" which will probably produce conditions favorable or detrimental to the future development of such diseases. In other words, if diseases of systemic nature or origin are to receive the attention of the dentist, he should obtain all possible light on his case, and the analysis of the urine throws considerable on diseases of this class. The examination of the urine, however, may be of little or no value if made with a view to the diagnosis of renal disease, and it is usually from this viewpoint, and in too many instances from this alone, that the physician makes his analysis. If, on the

other hand, the examination of urine is made to obtain the greatest possible amount of information regarding vital processes and the body metabolism, it should be of considerable value, at least in any case where there is a possibility of constitutional disturbance.

Urine analysis may be made in different ways to tell different kinds of stories. Not different stories with contrary indication, but different kinds of stories, supplementary to each other. The dentist is not benefited in his work by a knowledge of just the variety of acute nephritis from which his patient may happen to be suffering; in fact, the patient with acute nephritis or acute anything else, unless it be a toothache, usually postpones his visit to the dentist, and acute disease (not dental) is of little importance, except for its history; but the case is different when we come to the consideration of chronic maladies. The chronic disease means impaired function and diminished vitality somewhere or somehow, and its effect on the proper nutrition of teeth and gums is worthy of consideration. Dr. Metcalf of New Haven puts it well when he says that "We do know that normal function is dependent upon normal structure, and it follows that, disease being the perversion of function, and normal function depending entirely upon healthy or normal blood supply, an intimate knowledge of the chemistry of blood and nerve supply would seem indispensable."

The diseases of nutrition and faulty metabolism are receiving a constantly increasing amount of attention, but positive conclusions of a practical nature are difficult to obtain, because experimenting for long periods of time upon human subjects is impracticable and in many particulars impossible, and because the parallelism between laboratory or animal experimentation and corresponding conditions in the human organism may be very far from perfect.

I have referred to pyorrhea, and there is no disease better suited or upon which more work has been done or may be done to demonstrate the affirmative side of the question of the evening. I quote the following from an article in the *New York Medical Journal* by George F. Souwers of Philadelphia: "The cases of pyorrhea alveolaris which have come under the author's observation have led him to attach considerable importance to the constitutional factor, rheumatism, gout, etc., as bearing upon the etiology of this malady. Pyorrhea of the constitutional type should be treated systemically. If rheumatism or some other vitiated state is found to be a factor

in the causation of the disease a treatment should be instituted having in view the eradication of the constitutional taint." Analyses of urine and saliva will determine the existence of "vitiated states." While I have used this quotation because it supports my own theories on the subject, I fail to understand how the author can refer to rheumatism as a factor in the causation of pyorrhea, or how a Boston dentist, in a paper recently read before the Northeastern Dental Association, can seriously ask the question, Why, if pyorrhea is of constitutional origin, do not the gums show signs of some increased irritation in cases of acute rheumatism or gout? As I understand pyorrhea, it is a disease of itself, that is, a product of faulty conditions of some sort, and not secondary to gout or of necessity to any disease. If this is true it is as proper to speak of Riggs' disease as the cause of gout as is the converse, or there is as much reason to question that gout is a uric-acid disease because people suffering from acute rheumatic affection do not show indications of gout. Because the excess of uric acid in the blood is going in a given direction is of itself a reason why it should not at the same time go in another direction. Rheumatism and gout are seldom simultaneous manifestations of the uric acid diathesis.

I do not care to provoke a discussion of the etiology of pyorrhea, but I *do* want to cite a few cases of this as one of the diseases where an analysis of the urine will be of assistance to the dentist. This will be particularly true if, as I believe, there may be cases of pyorrhea which are *not* caused by uric-acid poisoning. During the past year I have examined the urine from a number of patients suffering from pyorrhea, and in the great majority of cases the results would justify placing uric acid among the probable causative factors of the disease. A patient of Dr. V. C. Pond showed increased uric acid in nine out of ten analyses made since June, 1902. I have had a number of specimens from Drs. C. P. and E. C. Briggs, and of these all have shown excessive amounts of uric acid, with one unmarked exception. I note particularly three in which the uric acid was very high and the hyperacidity very marked. Dr. L. M. Miner sent a sample showing high uric acid and excessive acidity; incidentally it may be stated that the acidity is *not* due, more than to slight extent, to the presence of uric acid. The uric acid is either combined with the alkaline bases as neutral or acid urates, or if in a free state it is very insoluble

in acid urine and appears in crystalline form in the sediment. Dr. D. W. Dickinson sent one sample with high uric acid and high acidity; this case also contained sodium oxalate. I have noted the presence of oxalates in other samples which have shown high uric acid, but cannot say from my observations thus far how general the occurrence may be. Samples have been received from Dr. H. W. Hardy and from Dr. H. E. Kahn in which the uric acid was very high, but increase of acidity was not so strongly marked. These are all supposed to be cases of pyorrhea, and an anti-uric-acid treatment has been recommended.

As previously intimated, laboratory experiments along these lines are not practicable, and preponderance of evidence furnished by cases in actual practice will give the most satisfactory and I believe the most conclusive information on the subject. Along this line Dr. J. Warren Achorn contributes the following record of three cases where Riggs' disease was materially benefited by an anti-uric-acid diet, which was given for other purposes, the benefit to teeth and gums being purely incidental. First, a woman of forty-five, weight ninety-eight pounds, sent by Dr. Robert Upham. History of canker of the tongue, had Riggs' disease of three years' standing; had been in the habit of eating in the morning red meat and coffee with considerable sugar. For lunch meat again, beef broth and coffee; at night, roast beef or lamb, a lot of tomatoes, and strawberries whenever available. For this was substituted a breakfast of cereal carrying a large amount of gluten, fish boiled or broiled (not fried), eggs twice a week, cestus bread and cestus phosphated crackers, cooked fruit, and cereal coffee. Lunch: White meats, chicken, turkey or game birds, fish, crackers and milk, berries (except strawberries), white grapes, and nuts. Dinner: A more extended course of the same general sort and including soups, raw oysters, plain lobster, little-neck clams, vegetables, and to a very limited extent the red meats, tomatoes, asparagus, etc. The result of this treatment for four months was marked improvement according to her dentist, not according to the physician, for he did not follow the case, but the dentist complained that this system of diet had lost him a patient.

The second case was a man who was cured of chronic recurrent lumbago in one year's time by diet similar to the above, but adapted of course to the peculiarities of the individual, as every diet list

must be. At the beginning of the treatment the patient had pyorrhea; at its finish the gums were hard and firm. The third case was a man, weight two hundred and thirty-three pounds; a large eater of sweets and meat. Had Riggs' disease and a tendency to apoplexy. He was treated for obesity, and out of regard to the apoplectic propensity special care was taken to reduce the blood-pressure as far as possible, and to this end all highly nitrogenous foods were eliminated from the diet, with the result that his weight was reduced to one hundred and ninety pounds and his Riggs' disease was cured.

Dr. Alexander Haig, a great English authority on dietetics, says that "the chief advantage of a bread and fruit diet is seen in the collemic, or *high blood-pressure group of uric-acid food poisonings.* Such used to be called diseases, and were reckoned under the names of headache, epilepsy, obesity," etc. From such cases as those above cited, which I have every reason to believe have been accurately stated, from the testimony of physicians and dentists, from books and articles on the subject which I have had time to read, and from my own results in examinations of urine and saliva of afflicted individuals, I have come to believe in the following summary of doctrine: *First.* The great majority of cases of Riggs' disease are accompanied by conditions of hyperacidity of the stomach and by high arterial tension. *Second.* That this disease (which I have used to illustrate my point simply because data concerning it were most easily available), if not due to is usually accompanied by and aggravated by the presence of excessive amounts of uric acid in the blood, and properly comes under the above classification made by Dr. Haig, although not specifically mentioned by him. *Third.* That such conditions may be shown by analyses of the urine and saliva, and may be greatly benefited by a carefully restricted diet based upon a study of the general metabolism of the patient. *Fourth.* That the more complete the knowledge of the case in all its details and complications, and the more closely the patient follows the doctor's directions, when based on such intimate knowledge, the better the results. This fourth statement may seem self-evident and unnecessary, nevertheless it is a very important and a much disregarded fact.

I believe most emphatically that the up-to-date dentist of the future will make dietetics and body metabolism an important part

of his study in every case dependent upon constitutional conditions. Further, physicians are more and more turning over to the dentists their patients with any sort of mouth-disease, and where complications of a systemic nature occur the dentist must make his investigation as thoroughly as the physician in order to treat the case as intelligently.

Now I want to spend a few moments in considering *how* this information may be obtained by the dentist. Dr. Michaels, Dr. Kirk and many others are putting considerable time and study on the relation of salivary analysis to dental diseases, and from the methods they employ a few simple tests may be selected which are easily made and will mean more as our general knowledge of the subject broadens. Dr. Michaels first notes the physical properties of a sample of saliva—its color, taste (which we omit), appearance, consistence and odor; also the appearance under the microscope and the micropolariscope. Then the chemical examination, consisting of a five-drop test for five different chemical principles. The first drop is tested for acidity or alkalinity with litmus. The second for ammonium salts with Messler's reagent. The third for sulphocyanates with ferric chlorid. The fourth for chlorids with silver nitrate and potassium chromate. The fifth for glycogen with Gram's reagent (aqueous iodin solution with potassium iodid). To these five I would add a sixth, made with equal ease and sometimes giving indications of importance—that is, a test for acetone. The test is made by dissolving in the drop of saliva a small crystal or fragment of potassium carbonate; then a small drop of iodin solution (Gram's) will develop the odor of iodoform if acetone is present. The iodoform separates in small yellow star-like crystals, which may be easily observed under the microscope. The picture shown by the micropolariscope is one of great beauty, besides being intensely interesting. A great variety of crystalline forms present themselves, but with the exception of a comparatively small number their significance has not been clearly demonstrated. The oxalates (sodium), lactophosphate and urates (sodium) I can show you.

Dr. Michaels says, "The presence of biliary pigments in the saliva is beyond any doubt. These substances can be seen in histological preparations of the saliva of diathetic individuals; also in pathological products of diseased blood and pus of alveolo-dental pyorrhea. The pigments are perfectly characteristic and it de-

pends only on the technique to discover them." Now, this is one of the things I am particularly anxious to have you teach me about, as I have never seen them to know what they are. I do not reflect on the accuracy of the quotation, but I have probably not yet stumbled upon the "technique." I shall be glad to examine any sample of saliva which you care to send to the Laboratory of the Harvard Dental School, and which in your opinion will show marked departure of some sort from the normal. If the saliva can be accompanied by a twenty-four sample of urine, additional light will undoubtedly be thrown upon the case.—*International.*

WHY MOLARS AND BICUSPIDS SHOULD BE RESTORED TO THE FULL MESIO-DISTAL DIAMETER. By J. F. Wallace, D.D.S., Canton, Mo. Read before the Northern Iowa Dental Society, August 12, 1904. The subject I shall present to you is not especially new, but I purpose giving a few of the many reasons that I have for restoring the full mesio-distal diameter of the tooth, to the end that the work performed may be of greater satisfaction both to myself and the patient, besides making an operation of far superior beauty and utility.

In selecting a subject upon which to form the basis of this essay, and after looking over my failures in the past and the defects in the work coming under my observation from other operators, I am convinced that there are few causes of failures of more frequent occurrence or producing more disastrous results, both to the hard and the soft tissues, than the failure on the part of the operator to restore the full mesio-distal diameter of the tooth. Conversely, when a tooth is once restored to its original mesio-distal diameter no operation will give such universal satisfaction to the patient and honor to the operator.

In the formation of cavities in the teeth there are two points especially susceptible to decay: first, the coronal portion of the crown, where decay makes its initial start in the imperfectly developed tissues of the tooth, where food accumulates and, owing to the inaccessibility of the part, due to the depth of the fissure and the force of the impact of the occluding tooth, the accumulations are crowded to the full depth of the fissure. In such cases the action of the brush is only partially successful in removing the accumulations, and decomposition takes place, which results

in the disintegration of tooth structure by the microorganisms of decay. The second vulnerable point is upon the proximal surfaces of the teeth, they being entirely protected from the cleansing effect of the foodstuffs in course of mastication. In this class of cavities the decay usually has its beginning just gingivally to the point of contact with the adjoining tooth and, owing to the obscurity of the location, usually progresses to such an extent that a large portion of the proximal surface becomes involved, breaking down and permitting the teeth to fall together, thus shortening the mesio-distal diameter and reducing if not obliterating the interproximal space.

It should be our first object to restore all parts of these affected teeth to their normal form and condition, except in a few instances which I shall mention where nature in her generosity has not provided the best form for cleanliness to the tooth, in which case we should supply such deficiencies and give those parts of the member that require our attention such a form as will add to its future usefulness and comfort and will least favor recurrence of decay. As with other operations, suitable instruments and appliances are necessary to facilitate its accomplishment. A proper knowledge of the prophylactic form of surfaces is also necessary to guide in their restoration as well as an adequate knowledge of the force of occlusion.

Where we neglect to restore the full mesio-distal diameter of a tooth we shorten the embrasure between the teeth, thus permitting the space to narrow; this prevents the free excursion of food through those spaces, the cleansing effect obtained upon the cavity margins being thus lost. Again, the full mesio-distal breadth not being fully restored, the teeth drop closer together, making it more difficult to cleanse the proximal surfaces and very materially increasing the area of susceptibility to decay. This necessitates the placing of the cavity margins farther lingually and buccally in order to place them beyond the area of susceptibility and re-decay.

Again, when we neglect to restore the full mesio-distal diameter of a tooth it is an absolute impossibility for the operator, be he ever so skilful, to bring the filling up to a close, sharp contact point. This necessary detail is of the greatest importance to the future welfare of the operation, as without it there is a restriction of the embrasures, which prevents cleanliness, and a narrowing

of the interproximal space, which produces an absorption of the soft tissues and provides a lodging place for food particles which harbor and nourish destructive bacteria.

If we neglect to restore the full mesio-distal diameter of teeth and they fail to fall together, thus not closing the space, we have a very annoying condition, which permits the collection of food, especially that of a fibrous nature, which often wedges between the teeth. Conditions of this kind are often found in teeth and fillings which have been flattened linguo-buccally; the gum septum in such cases is often almost destroyed. Many times this state of affairs produces much pain, and it is always followed by a state of inflammation. When this condition is permitted to continue for any length of time the alveolar process becomes absorbed and permanent loss takes place in both the hard and soft tissues.

Should the teeth close the space caused by the neglect that we have just spoken of and restore it fully mesio-distally, then the interproximal space is much shortened and the gum occupying that space, on account of being pinched and crowded upon, will yield to its surrounding conditions and be partially absorbed. This leaves a space difficult to cleanse and affords a place for the lodgment of food, which through the action of septic organisms decomposes, with destructive effect on both hard and soft tissues.

In finishing a filling which has been made in the proximal surface it should always be trimmed so as to present an oval or convex surface linguo-buccally. This form has the tendency to throw off all substances coming in contact with it in the course of mastication, and thus that which would otherwise be a cause of infection and destruction to the parts becomes a source of cleanliness and health.

When the embrasures, especially the lingual, are poorly formed, the filling being built out rather full, the spaces are very narrow and short. This tendency causes broader contact points and prevents the fullest freedom of movement in the passing of food over the cavity margins. Last, but not least, it largely hinders and retards the passing of food from between the tooth cusps, and in many instances, where the particles of food have a tendency to pack rather than slip from between them, this condition will cause the tooth to split, usually resulting in its entire loss. These embrasures should be beveled nicely from the contact point to the

lingual cusp and from the cusp to the bulge of the crown. This gives a well-formed face that permits the passage of food particles over the surfaces with no tendency to cling, hang or wedge between the teeth, facilitating cleanliness, providing comfort and health to the soft tissues, assuring greater utility from the tooth, and reducing the liability of recurrence of decay to a minimum, while the area of susceptibility is confined to a very small surface.

A great many of the teeth coming to us with cavities to be filled have lost the proximal surface, the teeth having settled together, with all the attending evils following the shortening of the mesio-distal diameter of the tooth. Should fillings be placed in these teeth without restoring them to their normal positions the interproximal contact will begin near the gingival margin, forming a flat proximal surface which will grasp the food, which in mastication is forced down upon the gum septum, thus producing much pain, a condition which if continued results in the absorption of that tissue. When thus flattened the interproximal space is closed up, leaving no opportunity for the use of the toothpick, floss or any other ordinary means of securing cleanliness. This also largely increases the area of susceptibility and necessitates the extending of both lingual and buccal margins in order to secure the cleansing effect of the excursions of food in the course of mastication over these surfaces.

In restoring the mesio-distal diameter there is no part of the operation requiring greater skill and exactness than that of restoring the interproximal contact point. In fact, there are few features in the restoration of a decayed tooth that are of greater importance than this, and still fewer dentists who understand the proper form to give to this part of the operation. In a large majority of the operations performed the interproximal contact point is a surface which extends from the gingival line to the occlusal surface of the filling occupying the full linguo-buccal surface. Nothing could be more radically wrong, and our profession should be roused from its lethargy and change the mode, form and character of this very important part of the operation. There should never be a broad contact, but on the contrary it should be nicely beveled from the lingual, buccal and gingival margins, bringing them all up to a small marble-like point, which in teeth normally situated should be just buccally to the center of

the tooth, while the occlusal surface should be beveled so that all food passing over it will have a free surface to slip over. This leaves the embrasure and the interproximal space well open and gives the patient a free open space with all natural conditions favoring cleanliness and ease of accessibility, enabling the most thorough use of the brush and such other means of cleanliness as may be deemed proper. This many times is accomplished only after thorough separation, securing ample space in which to make the proper contour. In the greater number of cases the necessary amount of room can be secured by immediate separation, but when this cannot be accomplished in this way it is always advisable to resort to the use of cotton, tape or gutta-percha in order to secure the necessary space.

It frequently occurs that the proximal surfaces become flattened from the continual wear of one tooth upon the other, the contact point being flattened or almost annihilated. This is seldom seen except in middle-aged people, but when such a case presents we usually find a condition favoring the impact of food into the interproximal space and more or less annoyance resulting therefrom. When these surfaces present a cavity of decay it is of the greatest importance to first obtain sufficient space to restore the full mesio-distal diameter of the tooth. It occasionally happens that we find serious annoyance and discomfort from food wedging between the teeth when no cavity is present, but usually there is a pocket near or just beneath the gum line where decomposition of food takes place and through which caries is often developed. In this class of cases it is advisable to cut a cavity in the proximal surface of the tooth and fill it with a permanent filling material, restoring both the proximal surface, interproximal contact and the mesio-distal diameter of the tooth.

Where fillings otherwise perfect, but which from wear or from lack of proper contouring when placed in the cavity, present a broad, flattened interproximal surface and contact, it is frequently necessary to secure sufficient separation and then by cutting a slot in the filling restore the tooth to its normal diameter. This will bring about most satisfactory results, restoring the parts to their normal condition and providing comfort to the patient where previously almost continuous pain and uncleanliness existed.

In many cases coming to us for restoration the teeth are very

broad and thick at the neck, the proximal surface broad and flat, the embrasures narrow and shallow. In this class of teeth the restoration of the full mesio-distal diameter is hardly sufficient to accomplish the best results, but by the use of any of the ordinary means of separation the filling may be extended sufficiently to change the interproximal contact, rendering the embrasures and interproximal surface of a fairly good prophylactic form, thus reducing the liability to recurrent decay.—*Brief.*

THE MORBID FIELD AND NUTRITION. By Dr. F. de Grandmaison, Paris. (*Revue des Maladies de la Nutrition.*) After reviewing the investigations of Pasteur the author begins the discussion of the subject embodied in the title of his communication by defining nutrition, which he states to be the aggregate of biological, physical, and chemical phenomena which assure the development and preservation of normal life and the eradication of the troubles from which our organism suffers more or less constantly. The phenomena of nutrition have for centers or laboratories the cellular elements which together constitute the different organs of our system. The physiologic functions of each and every living cell may be separated into three acts: first, they take from the surrounding media the elements necessary for their nutrition; second, by the inherent activity of their protoplasm they modify and transform these elements in such a way as to facilitate the absorption of their vital principles; third, they throw out the non-assimilable products and the debris formed in the course of the vital metamorphosis of protoplasmic activity. In more concise terms it may be said that cellular activity implies the accomplishment of three functions: absorption, assimilation, and dissimilation. Life is a result of the constant equilibrium of these three essential acts. It is not sufficient to consider only one single group of cells. All cellular groups are dependent upon each other, and health is the result of an harmonious activity between these different varieties of cellular elements. The muscular cell, the pulmonary cell, the digestive cell, etc., are dependent upon each other for their normal work. Finally, all these cells of the organism are considerably dependent upon the nervous cell, the function of which is, by means of its prolongation, the nerve fiber, to transmit to all the different organs which constitute the body the impulse which puts the machinery in motion.

If we were perfect organisms our lives would be equally perfect. We would always be in perfect health, never weakening or becoming old. Unfortunately we have constantly to deal with external agents susceptible of modifying the vital reactions. We create for ourselves artificial and fictitious needs, habitual generators of dangerous poisons. We work our organisms without any attention whatever to their strength, instead of economizing our vital forces as much as possible. Furthermore, through heredity our vital forces receive at times disturbing impulses which interfere with the regularity and good functioning of our organs. All these detrimental influences create opportunities for the establishment of morbid fields. Nutrition regulates and governs the receptivity of the organs to pathogenic influences. The nearer to perfection the vitality of an organism, the greater will be its degree of resistance to infectious and pathologic agents. It is a clinically observed fact that sober and sufficiently active young men are better able to resist the influence of infectious agents than are mature or aged adults. The author has observed that in military hospitals the young soldiers free from serious functional disorders easily overcome those acute diseases which generally terminate fatally in the adult or aged patients of civil hospitals. This is because at the age of twenty the human body is possessed of a powerful degree of vitality and resistance, from the fact that at such an age the different organs have attained as perfect a development as may be ever expected, whereas later in life they will suffer from fatigue due to work and from other causes which lower the resistance of the human economy.

The author then asks whether it is possible from clinical signs to estimate the character of body reaction. This, it is found, may be accomplished in several ways: by the weight of the body, by the manner in which the bodily functions are carried on, and by urinary examinations. The variations in weight furnish valuable data. Every one of us, according to height and age, should weigh a determined number of pounds. This is what Gautrelet in his several studies has designated as the biologic weight, or more correctly the biologic coefficient. This coefficient represents in the case of each individual a quantity of living matter which must undergo the nutritive metamorphoses indispensable to the preservation of life. If the weight be markedly below normal it is a sign that the assimilable material available is insufficient relatively to the

degree of activity expended; the organism is burning more fuel than it receives and is therefore in bad condition to defend itself against disturbing factors. If, on the other hand, the weight be higher than normal, the opposite has occurred; the individual is using up less energy than is supplied by the material taken into the body. The surplus of assimilable principles introduced is converted into fat, which accumulates in the muscular and visceral interstices; nutrition becomes sluggish. Men of this class are less vulnerable to infectious diseases, but nevertheless may become sufferers from other serious pathologic disturbances.

The author does not touch on the data which may be obtained from careful examination of the several organic functions, but deals, however, with the subject of urino-semeiology. The urine, as it contains the most important excretory principles of the entire organism, furnishes by means of clinical analysis a statement of whatever morbid condition may be present. Gautrelet, in his work on urinary semeiology, divides individuals into two great classes: first, the hyperacids, those in whom nutrition is deficient; and the hypoacids, those in whom nutrition is considerably exaggerated. These two types of diathesis constitute morbid fields which will react differently toward infection. The knowledge acquired in the bacteriologic laboratory agrees with our observation in the human body. It is a well-known fact that microbes thrive in alkaline media, and that it suffices to acidify them to interfere with and even arrest definitely their growth. It is therefore reasonable to admit that the more acid the secretions of the body are, the more difficult will it be for microbes to develop in them.

Hand in hand with a decrease in acidity will the facility for microorganisms to develop increase, inasmuch as pathologic organisms will find under these conditions a medium suitable for their growth and development. It is perhaps here that we find the readiest explanation of the difference in the diseases encountered in hospital and in private practice. Frequently the well-to-do patient is of the hyperacid class, while hospital patients are of the hypoacid. In the course of a series of observations made by Gautrelet in a Paris hospital he found hypoacidity in all the patients. Only the chief of service and his students were hyperacids. Acute infections take on a serious aspect in hospital patients because of their hypoacid diathesis. On the other hand we find that the private patient

is frequently the subject of gout, diabetes, and all the manifestations of arthritism.

The normal equilibrium of the organism is obtained by an equation between assimilation and dissimilation. In the hypoacid diathesis assimilation is on the decrease, while dissimilation is on the increase. Assimilation is diminished because of insufficient nutrition, defective domestic hygiene, and a marked decrease in oxygen supply. That nutrition in such patients is insufficient is a statement which hardly needs to be explained. The laboring classes, who depend for their living upon a small income, deprive themselves of many articles of food which would otherwise furnish them with the amount of albuminoid and ternary elements necessary for the preservation of health. They live in limited quarters insufficiently ventilated; they work in unsanitary shops containing scarcely the amount of oxygen necessary for the functions of the body. Assimilation, it should be understood, implies not only nutrition, but also those physiologic acts by means of which we take from the surrounding atmosphere the several necessary elements which the body requires. But the most serious error in the hypoacids is due to an exaggerated dissimilation.

Here the author discusses the detrimental effect of alcohol upon the functions of the body, recalling the well-known fact that alcoholics are more prone to the ravages of tuberculosis than are men of temperate habits.

In the hyperacid diathesis the reverse condition of things is present, assimilation being on the increase, and dissimilation on the decrease. This diathesis is found among people of wealth and among members of the liberal professions. Assimilation is here exaggerated; they lack the necessary proportion of ternary elements.

Hyperacids as a rule take no physical exercise; they seldom give any active play to their muscles, living confined in their laboratories or offices. The hyperacidity present modifies their receptivity to infectious diseases, which they are less liable to contract than are the laboring classes; but they easily acquire the diseases that are characterized by slow dissimilation—namely, rheumatism, gout, diabetes, etc.

PATHOLOGIC ERUPTION OF THE LOWER THIRD MOLAR. By Dr. Leon Frey, Paris. (*l'Odontologie.*) The author

has observed a number of cases of difficult eruption of the lower third molar, and here reports a few of particular interest to the practitioner. The first case was that of a man in his fifties. For over ten years he had been a sufferer from a series of phlegmons both submaxillary and gingivo-buccal. Those within the oral cavity had gradually caused the loss of a considerable amount of alveolar tissue, to such an extent as to cause the loosening of the first and second molars, which were removed by the patient himself. The patient being of the rheumatic diathesis, the diagnosis of pyorrhea alveolaris was made, and as all the remaining teeth were firm in their alveoli he hoped that the disorder had come to a standstill. But it was not very long afterward that he was brought by his physician to Dr. Frey suffering excruciatingly from a gingivo-buccal abscess in the same region in which previous ones had developed. With the exception of the space produced by the loss of the two teeth above referred to, the mouth was in perfect condition. All the third molars excepting the lower right one had erupted. The patient could not throw any light on this anomaly. The mucous membrane throughout the mouth presented a healthy appearance. Close examination revealed a depression at the base of the ascending ramus, and through a small opening an exploring sound was introduced, which after following a tract about two centimeters in depth through roughened bone edges came finally into contact with a smooth, polished surface easily diagnosed as enamel. The offending tooth was removed under chloroform, cicatrization was complete in six weeks, and since the operation was performed, in April, 1894, the phlegmons have not reappeared.

The second case was that of a woman aged seventy-six, in whom had developed an indurated swelling extending from under the right mandibular angle down to the clavicle. The patient did not suffer any pain whatever, and the physician having diagnosed the disturbance as a lympho-sarcoma had decided not to operate, owing to her advanced age. In the interim the patient visited Dr. Frey about a carious lower molar. During the examination it was observed that a sound could be made to penetrate back of the carious tooth for a short distance, then striking a hard, uneven surface like the occlusal plane of a molar. The patient was positive in her assertion that on that particular side the third molar had never erupted. The inclosed tooth was removed with difficulty under

cocain anesthesia, and two months afterward not only had the intra-buccal wound completely healed, but the so-called lympho-sarcoma had disappeared.

The third case was that of a man aged fifty. For about two months he had been suffering from a trismic condition which rendered almost impossible the ingestion of the smallest quantity of food. At times a suppurating condition would develop about the left cheek. His dentist had diagnosed the case as one of impacted tooth, but after a long hour's work with the patient under chloroform had failed to remove it. Dr. Frey succeeded after a most careful operation, which necessitated the removal of part of the alveolar border underlying the tooth before any attempt at extracting could be made. The wound had entirely healed and the trismus had disappeared only after four months of careful post-operative treatment.

Removal of Adenoids.—The poor results obtained from this operation are usually due to the lack of supplementary treatment following the operation. The removal of obstructions will not be followed by nasal breathing except through the proper training of the child in overcoming habit. The second step should be the correction of dental deformities.—*Cincinnati Lancet.*

Electric Terms in Current Use.—Electricity has a scale of measurement that it is well to understand. The basis of this scale is the volt, which is the unit of electric-motive force—that is to say, the force by which the electricity is driven; then comes the ohm, or the amount of resistance offered; then the ampère, or the unit of power required to overcome the resistance. For instance, it takes a one-pound hammer with a one-pound blow to penetrate a given substance, but a substance offering twice that resistance would require with the one-pound hammer greater pressure to penetrate in proportion to the resistance offered. So if we have one volt and a resistance offered of one ohm, we would multiply the number of volts by the number of ohms and have the power of the ampèrage, which in this case is one. The term "ampère" is usually expressed as ampère hour, or the amount of current used to overcome a given amount of resistance for one hour. The voltage multiplied by the ampèrage gives us what is called the watt; for instance, the current is ten volts, and the device offering one ohm resistance would be $10 \times 1 = 10$ ampères in consumption. Then the number of watts used would be the voltage, 10, multiplied by the ampèrage, 10, or 100 watts. One thousand watts is termed a kilowatt. The watt, like the ampère, is usually expressed by the adding of the word "hour," as one watt hour, etc. The terms used in the measurement of electricity are well to know and to learn, and while no doubt confusing at first, will soon be as readily understood as the grain, ounce, and pound.—Harry M. Hill, *Era.*

The Dental Digest.

PUBLISHED THE LAST WEEK OF EVERY MONTH

At 2231 Prairie Avenue, Chicago,

Where All Communications Should be Addressed.

Editorial.

DENTAL POVERTY.

We would call the especial attention of our readers to the article on this subject by Dr. Junkermann in this issue, and the article by Dr. Pearce this month is along the same line. Both essayists apologize a little for writing on such subjects, but they should rather be commended, for as Dr. Chapple said not long ago—"We have patted ourselves upon the back and fairly filled the air with our Eurekas as the result of our achievements, until we are almost drunk with self-adulation." One of the main reasons why the dental profession is not progressing more rapidly is because its members are quite satisfied with their condition, and this feeling is fostered by nine out of ten papers read before dental societies, excepting those on strictly scientific subjects. The average essayist portrays an ideal condition of dentistry rather than the real one, for it is much easier and more pleasant to say agreeable things, even if they are not quite true, than to give utterance to disagreeable truths.

It is perfectly absurd to argue that because dentists are professional men and serve suffering humanity they should utterly ignore financial considerations. In discussing Dr. Junkermann's paper Dr. Price takes the purely ethical view of the situation, as most men do who think or write on the subject, and asks, "What are we here for if not the good we can do for others?" Our professional obligations to our patients should be no more binding than our financial obligations to others. The mere fact that a dentist is a professional man does not exempt him from paying his bills promptly, and the sooner this fact is universally recognized the more rapid will be our progress and elevation in the eyes of the

community. It is a humiliating fact that dentists to-day are considered poor pay in the business world, but even those who have suffered the most do not claim that dentists intentionally evade obligations or mean to do anything but what is right. Nevertheless the fact remains that from the financial standpoint the profession has an unenviable reputation. Nothing will more quickly lose a man the respect of a community than carelessness in money matters. How can a dentist expect his patients, the majority of whom are business men with strict ideas regarding money matters, to accord him any esteem when he does not pay his own bills promptly nor expect them to do so? The longer a dental bill runs the fainter becomes the recollection of the work and the appreciation of the services rendered. Of what avail is it for a practitioner to impress upon a patient the value of the service which he is rendering, when he controverts any such idea by making little effort to obtain remuneration for his work? Human nature appreciates those things for which it has to pay, and the higher the fee and the prompter the demand the greater the appreciation.

One of the strongest criticisms of church, missionary and educational work in the past has been that frequently the funds were wasted through unbusinesslike methods, and men of wealth often refused to contribute for that reason. To-day religious and educational institutions are adopting business methods almost universally, and if religion and education can be conducted on correct business principles there is no reason why any profession cannot be. The fault lies first of all in the fact that dentists do not keep careful records of operations and collect their accounts promptly. We would not be iconoclastic, and far be it from us to advocate the conduct of a dental practice on a commercial rather than a professional basis, but there is a happy medium. Looking at the matter purely from the professional standpoint, no man can do his best work when he is harassed and worried by financial obligations, as most dentists are. Also, the prospect of working at the chair until the eyes grow dim and the hand trembles, and the knowledge that when the end comes the family will be left unprovided for, certainly do not conduce to the greatest efficiency. It is folly to blind our eyes to the real faults existing in the conduct of our affairs, and strive to attain ideal conditions and place dentistry on the high plane where it properly belongs by mere theorizing.

PRETENSE VERSUS PRACTICE.

Some time ago the editor of the *International Dental Journal* gave utterance to the following: "The large majority of dentists fail to make any distinction between the literature that originates in a supply house and that which comes directly through the medium of professional effort. The stream cannot rise higher than its source, and the journal published by a supply house cannot represent anything but trade." The majority of dentists evidently do make a distinction, for the larger number of those journals published by supply houses greatly surpass the *International* in point of circulation, and in amount if not in quality of valuable reading matter. Furthermore, the statement that "the journal published by a supply house cannot represent anything but trade" is what Dr. Patterson calls "an exhibition of mental biliousness," for the majority of the so-called trade dental journals represent individually more of the leading dental societies than does the *International* and wield quite as great an influence for good. However, it is not our intention to enter into a discussion of dental journalism or to defend the "supply house journals," for they don't need any defense. Neither is it necessary to defend the DIGEST, for any criticism of "trade dental journals" does not apply to it, as it has no connection, financial or otherwise, with any supply house, and is more independent in tone, liberal in policy, and representative of the best society work and the best interests of the dental profession than the *International* ever thought of being.

Out of regard and respect for the past work and sterling character of the editor of the *International* we have hitherto refrained from criticism of the policy of that journal, and have paid no attention either to his unwarranted personal attacks upon us or to the intellectual dyspepsia manifested by his carping flings at almost everything in dental creation. When, however, he violates not only dental ethics but also ignores the very rudiments of journalistic courtesy and fair dealing we are forced to remonstrate. For two years the DIGEST has been the official organ of the Pennsylvania State Dental Society, and in consideration of our furnishing to the members bound copies of the proceedings at a heavy expense the society, as is customary, has given the DIGEST the sole right to publish its papers. The editor of the *International*

was perfectly well aware of these facts, and yet immediately after the meeting last summer he published a paper by Dr. Anema which had been read before the society and thereby became its property. The secretary of the society wrote him for an explanation and received this discourteous and altogether unsatisfactory reply—"I have no further explanation to make regarding the paper named than that it was received at this office and published." In August, 1903, we published an article by Dr. Talbot, entitled "The Pathogeny of Osteomalacia or Senile Atrophy," and had cuts made at considerable expense to illustrate same. In January, 1905, the same article and cuts appeared in the *International* without a line of credit to the DIGEST.

If these discourteous and dishonorable acts were all we had to charge against the *International* we would not refer to them at this time, but it is guilty of a far greater wrong. For several months past it has been and still is publishing the advertisement of an individual who calls himself an "Authentic Ad Writer," whatever that may be, and who advertises—"Few Questions About New Trade When You Use Ads Written By Me. My Ads Get Trade That Is Worth While. They Seldom Make Enemies. Readers Are Aroused With A Curious Desire To Come To You," etc., etc. In the eyes of the law and of decent people the man who rents his property to gamblers and other disreputable parties is held quite as guilty as they are, and much more so than the poor dupes who are fleeced. On the same principle the profession must hold the editor of a dental journal who sells his space to a professional ad writer far more guilty of violating professional ethics than the poor benighted individuals who resort to advertising to increase their patronage. In many cases they don't know any better, but the editor does, and such exhibitions as we have outlined come with exceeding poor grace from one who can see no good in other dental journals and who wants his own to be considered the only pure and good thing in the universe.

Notices.

LORAIN COUNTY (O.) DENTAL SOCIETY.

The Lorain County (O.) Dental Society met at Elyria, Jan. 11, 1905, and elected the following officers: President, C. S. Kelsey; Vice-president, B. A. Purcell; Secretary and Treasurer, J. S. Ewalt.

TEXAS STATE DENTAL ASSOCIATION.

The Texas State Dental Association will meet in Austin May 18-20, 1905. All ethical members of the profession are invited to meet with us.

BUSH JONES, Secy., Dallas.

NEBRASKA STATE DENTAL SOCIETY.

The Nebraska State Dental Society will hold its annual meeting in Lincoln, May 16-18, 1905. The profession is cordially invited to attend.

H. R. HATFIELD, Cor. Secy., York.

YORK COUNTY (PA.) DENTAL SOCIETY.

The York County (Pa.) Dental Society held its fourth annual meeting at York, Feb. 1, 1905, and elected the following officers: President, B. H. Pearce; Vice-president, J. M. McKinnon; Secretary, H. A. Free; Treasurer, C. P. Rice.

SANTA CLARA VALLEY (CAL.) DENTAL ASSOCIATION.

The Santa Clara Valley (Cal.) Dental Association held its annual meeting and banquet at San Jose, Feb. 8, 1905, and elected the following officers: President, J. H. Bland; Vice-president, F. L. Couch; Secretary, E. O. Pieper; Treasurer, A. M. Barker.

BOARD OF DENTAL EXAMINERS OF PENNSYLVANIA.

The Board of Dental Examiners of Pennsylvania will conduct examinations simultaneously in Philadelphia and Pittsburg, June 6-9, 1905. For papers or further information applicants must address Dr. N. C. Schaeffer, Secretary Dental Council, Harrisburg.

TENNESSEE STATE DENTAL ASSOCIATION.

At the annual meeting of the Tennessee State Dental Association, held at Memphis, Feb. 21-24, 1905, the following officers were elected: President, A. J. Cottrell, Knoxville; 1st Vice-president, A. A. McClanahan, Springfield; 2d Vice-president, Chas. A. Sevier, Jackson; Recording Secretary, Chas. A. Tabel, Memphis; Corresponding Secretary, J. D. Towner, Memphis; Treasurer, John R. Beach, Clarksville; Member of Executive Committee, S. R. Hardison, Columbia.

MICHIGAN STATE BOARD OF DENTAL EXAMINERS.

The Michigan State Board of Dental Examiners will hold its next meeting for examination at Ann Arbor, May 16, 1905, commencing at 9 a. m. For further information address the secretary.

CHAS. H. OAKMAN, Secy., 29 State St., Detroit.

ALAMEDA COUNTY (CAL.) DENTAL SOCIETY.

The annual meeting and banquet of the Alameda County (Cal.) Dental Society were held at Oakland, Feb. 1, 1905, and the following officers were elected: President, W. F. Schwaner; Vice-president, J. S. Enos; Secretary, H. B. Knox; Treasurer, H. M. Henderson.

SANDUSKY COUNTY (O.) DENTAL SOCIETY.

The Sandusky County (O.) Dental Society held its annual meeting at Fremont, Feb. 9, 1905, and elected the following officers: President, H. W. Donaldson, Bellevue; Vice-president, J. F. Eberhard, Fremont; Secretary, S. F. Weeks, Clyde; Treasurer, M. R. Barnard, Monroeville.

RED RIVER VALLEY (MINN.) DENTAL ASSOCIATION.

The Red River Valley (Minn.) Dental Association held its annual meeting at Crookston, Feb. 10, 1905, and re-elected the following officers: President, W. A. Robertson, Crookston; Vice-president, J. E. Ague, Red River Falls; Secretary, J. F. Boles, Crookston; Treasurer, S. Rowan, Hillsboro.

THIRD DISTRICT DENTAL SOCIETY OF NEW YORK.

The Third District Dental Society of the State of New York elected the following officers Jan. 17, 1905: President, J. L. Appleton, Albany; Vice-president, W. E. McCarthy, Troy; Secretary, C. E. Allen, Albany; Treasurer, P. S. Oakley, Troy; Correspondent, F. L. Ames, Albany; Editor, L. S. Blatner, Albany.

ADAMS AND HANCOCK COUNTY (ILL.) DENTAL SOCIETY.

The Adams and Hancock County (Ill.) Dental Society was organized at Quincy, Feb. 6, 1905, and the following officers were elected: President, E. M. Robbins, Carthage; Vice-president, J. W. Marsh, Warsaw; Secretary, H. L. Whipple, Quincy; Treasurer, H. F. Naumann, Quincy; Librarian, G. K. Fleming, Carthage.

CHESTER AND DELAWARE COUNTY (PA.) DENTAL ASSOCIATION.

The Chester and Delaware County (Pa.) Dental Association held its tenth annual meeting and banquet at West Chester, Feb. 23, 1905, and elected the following officers: President, H. I. Haines, Coatesville; Secretary, J. H. Campbell, Media; Treasurer, H. L. Smedley, Media.

KANSAS STATE DENTAL ASSOCIATION.

The thirty-fourth annual meeting of the Kansas State Dental Association will be held in Topeka, May 18-20, 1905. Headquarters at Copeland Hotel. Special attention is being given to the clinical program. A cordial invitation is extended to the profession to be present.

F. O. HETRICK, Secy., Ottawa.

TEXAS STATE BOARD OF DENTAL EXAMINERS.

The Texas State Board of Dental Examiners will meet in Austin, May 15, 1905, for the purpose of examining applicants. Examinations will be both theoretical and practical. Applicants must furnish instruments, materials and patients for any demonstration called for by the board.

C. C. WEAVER, Secy., Hillsboro.

CALIFORNIA STATE DENTAL ASSOCIATION.

At a meeting of the board of trustees of the California State Dental Association, held in San Francisco, Feb. 10, it was unanimously decided to adjourn the state meeting for 1905 in favor of the Lewis and Clark Dental Congress, to be held in Portland, Ore., July 17-20, 1905.

J. L. PEASE, Cor. Secy., Oakland.

LOWELL (MASS.) DENTAL SOCIETY.

The Lowell (Mass.) Dental Society held its annual meeting Jan. 25, 1905, and elected the following officers: President, Hugh Walker; Vice-presidents, F. W. Barnes and W. H. Pepin; Secretary, E. E. Kinney; Treasurer, M. S. Phillips; Executive Committee, C. F. Harris, V. E. Darling, F. G. Gulliland, E. L. Farrington, C. E. Ludger; Librarian, D. D. Snyder.

CENTRAL DENTAL ASSOCIATION OF NORTHERN NEW JERSEY.

The Central Dental Association of Northern New Jersey held its annual meeting and banquet at Newark, Feb. 20, 1905, and elected the following officers: President, T. S. Dunning, Paterson; Vice-president, J. S. Vinson, Newark; Executive Committee, W. M. Gould, Newark; C. F. A. Hane, Jersey City; C. I. C. Smith, Newark; F. G. Gregory, Newark; V. D. Rood. Morristown.

CHAPIN HARRIS DENTAL SOCIETY.

The Chapin Harris Dental Society was organized at Atlanta, Ga., Feb. 16, 1905, and the following officers were elected: President, M. C. Marshall, St. Louis; 1st Vice-president, B. Holly Smith, Baltimore; 2d Vice-president, C. B. Colson, Charleston, S. C.; Recording Secretary, M. D. Huff, Atlanta; Corresponding Secretary, Delos Hill, Atlanta; Treasurer, H. R. Jewett, Atlanta. The organization will embrace members from all southern states, and is intended to be a representative organization of southern dentists.

UNION COUNTY (ILL.) DISTRICT DENTAL SOCIETY.

The Union County (Ill.) District Dental Society, comprising the counties in the extreme southern portion of Illinois, was organized at Anna, Feb. 8, 1905, and the following officers were elected: President, G. W. Entsminger, Carbondale; Vice-president, W. F. Willard, Anna; Secretary, J. C. Van Ornam, Murphysboro; Treasurer, J. S. Brentlinger, Jonesboro; Librarian, J. T. Cummins, Metropolis.

NATIONAL ASSOCIATION OF DENTAL FACULTIES.

The annual meeting of the National Association of Dental Faculties will be held at Buffalo, commencing at 2 p. m., Thursday, July 22, 1905. The Executive Committee will meet at 10 a. m., the same day. Special business to come before the Association is the consideration of the proposed revision of the constitution and by-laws.

JOHN I. HART, Secy., Ex. Com., New York.

SOUTHERN BRANCH NATIONAL DENTAL ASSOCIATION.

The annual meeting of the Southern Branch of the National Dental Association was held at Memphis, Tenn., Feb. 21-24, 1905, and the following officers were elected: President, W. G. Mason, Tampa, Fla.; 1st Vice-president, N. N. Vann, Attalla, Ala.; 2d Vice-president, L. M. Cowardin, Richmond, Va.; Corresponding Secretary, J. A. Gorman, Asheville, N. C.; Recording Secretary, John R. Beach, Clarksville, Tenn.; Treasurer, B. D. Brabson, Clarksville, Tenn.

MACON-MOULTRIE COUNTY (ILL.) DENTAL SOCIETY.

The Macon-Moultrie County (Ill.) Dental Society was organized at Decatur, Feb. 9, 1905, and the following officers were elected: President, A. S. Waltz, Decatur; Vice-president, L. Butler, Sullivan; Secretary, E. T. Evans, Decatur; Treasurer, O. T. Eddy, Decatur; Board of Censors, C. R. Lawrence, Bethany; H. A. Vaughan, Decatur; D. S. Anderson, Maroa; Program Committee, R. O. Crouch, Maroa; W. R. Adams, Decatur; L. E. Conradt, Decatur.

ILLINOIS STATE BOARD OF DENTAL EXAMINERS.

The next regular meeting of the Illinois State Board of Dental Examiners to examine applicants for license to practice dentistry in this state will be held in Chicago May 4, 5 and 6, 1905. Under an opinion of the Attorney-General the following are eligible to take the examination before the board: "Anyone holding a medical diploma from a reputable medical college; anyone who has been a legal practitioner of dentistry for ten years prior to moving into the state, and anyone who failed to register in this state at the time the law went into effect, which was in 1881." Candidates must furnish their own patients, and come provided with the necessary instruments, rubber dam and gold to perform practical operations, and such other work as is deemed

advisable by the board. Those desiring to take the examination should matriculate with the secretary at least ten days before the date of meeting. The examination fee is $10.00. Any further information can be obtained by addressing the secretary.

J. G. Reid, Secretary,
1204 Trude Bldg., Chicago.

UNIVERSITY OF IOWA DENTAL DEPARTMENT ALUMNI ASSOCIATION.

The annual clinic of the University of Iowa Dental Department Alumni Association was held at Iowa City, Feb. 7, 1905, and the following officers were elected: President, J. B. Pherrin, Central City; Vice-president, A. W. Starbuck, Iowa City; Secretary, E. A. Rogers, Iowa City; Treasurer, C. M. Work, Ottumwa; Executive Committee, W. A. Hosford, Iowa City; K. M. Fullerton, Cedar Falls; R. S. Bandy, Tipton.

CLASS '91, NEW YORK COLLEGE OF DENTISTRY.

On January 14, 1905, a representative gathering of the class of '91, N. Y. C. D., sat down to the festive board at the Hotel St. Denis in New York City, and renewed once more the ties that were formed in the old 23rd St. building. A most enjoyable evening was spent, and it was decided to hold a dinner annually on the first Saturday of each February. D. C. Baker was elected chairman of the dinner committee for 1906.

W. D. Provost, Chairman, Brooklyn.

UNIVERSITY OF CALIFORNIA DENTAL DEPARTMENT ALUMNI ASSOCIATION.

The annual meeting and clinic of the Alumni Association of the Dental Department of the University of California will be held at the College Infirmary, Taylor and Market Streets, San Francisco, May 16-17, 1905. Assurance of a large number of clinics guarantees a successful meeting. All reputable dental practitioners are cordially invited to be present.

Percy B. Gaskill, Secy.

LEWIS AND CLARK DENTAL CONGRESS.

The Lewis and Clark Dental Congress, to be held in Portland, Ore., July 17-20, 1905, promises to be the largest dental meeting ever held on the Pacific Coast. The Committee on Clinics asks for voluntary clinics or table demonstrations from members of the profession, and suggests that notice of same be sent to committee as soon as possible. In order that the program may be complete, names of clinicians and titles of clinics must reach the chairman not later than June 15. The committee is as follows: G. H. Nottage, Chairman, Oregonian Bldg., Portland; F. I. Shaw, Seattle; B. S. Scott, Tacoma; A. Stark Oliver, Spokane; C. E. Post, San Francisco; Claude W. Gates, Salt Lake City; J. H. Holmes, New Westminster, B. C.; A. W. Cate, Boise, Idaho; W. H. Barth, Great Falls, Mont.

SOUTH DAKOTA STATE BOARD OF DENTAL EXAMINERS.

The next meeting of the South Dakota State Board of Dental Examiners will be held at Mitchell, July 11, 1905, beginning at 1:30 p. m. All candidates will be required to do practical work in both operative and prosthetic dentistry, and should bring all instruments and material necessary for same. Vulcanizers, lathes and swaging appliances will be furnished by the board. Application and fee of $10 must positively be in the hands of the secretary before July 7. G. W. COLLINS, Secy., Vermilion.

NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

The annual meeting of the National Association of Dental Examiners will be held at the Iroquois Hotel, Buffalo, commencing 10 A. M., Monday, July 24, 1905, and continuing until adjournment. The rates per day for single rooms will be $1.50, $2.00 and $2.50; $3.00 and $4.00 for double rooms; $3.00 to $3.50 for rooms with bath. The sessions will be held in commodious rooms in the hotel. Write early and secure accommodations. Arrangements for members from the East for reduced excursion rates have already been made with the fast trains on the Delaware & Lackawanna R. R., leaving New York at 10 A. M., 6:10 P. M., 8:45 P. M. and 2 A. M. It is earnestly requested that secretaries of the various state boards will communicate at once any change in members' names and addresses.

CHARLES A. MEEKER, Sec'y,
29 Fulton St., Newark, N. J.

Latest Dental Patents.

780322. Electric dental instrument holder, Monroe N. Callender, San Francisco.

780146. Dental instrument, Amos A Wilcox and M. Jewett, Cleveland.

780147. Dental instrument, Amos A. Wilcox and M. Jewett, Cleveland.

780919. Dentometer, Ned Shockley, Farragut, Iowa.

780589. Dental automatic plugger, Alexander W. Wimmer, Chicago.

781587. Rubber disk for dental use, Joseph E. Blake, Amesbury, Mass.

781589. Dental plate, Cyrus L. Buckwalter and W. G. Wirt, Londonville, Ohio.

781405. Blank for dental plates, Marcus A. Coykendall, Grand Rapids, Mich.

781277. Tooth-crown holder, Charles W. Fahey, Chicago.

781420. Artificial tooth, John R. Haldeman, Kansas City.

781292. Mouth brush, James M. Murphee, Dothan, Ala.

781617. Dental disk carrier, Otto B. Price, Moncton, Canada.

781313. Dental disk package, Jacob A. Thomas, Hanover, Pa.

781168. Means for attaching artificial teeth to plates, James B. Wells, Morris, N. Y.

781762. Electrical dental furnace, Luther L. Bosworth, Cleveland.

781876. Abrading disk, Frederick N. Gardner, Beloit, Wis.

782627. Dental plate, Herbert J. Tarr, Jr., Chicago.

News Summary.

JOHN R. COLE, a dentist at White Lake, S. D., died Feb. 5, 1905.

GEORGE A. BRIDGE, a dentist at Providence, R. I., died Feb. 23, 1905.

E. S. BILLUPS, 79 years old, a dentist at Watkinsville, Ga., died Jan. 6, 1905.

JAMES C. DANA, a dentist at Katonah, N. Y., died of apoplexy, Feb. 1, 1905.

LOUIS M. GRIFFIS, 69 years old, a dentist of Hamilton, O., died Feb. 7, 1905.

S. S. JOHNSON, 60 years old, a dentist at Lexington, Ky., died Feb. 29, 1905.

EDWARD LEWIS, 64 years old, a dentist at Dover, Del., died Jan. 31, 1905.

H. T. WOOD, 71 years old, a dentist of Coburg, Ont., died Feb. 11, 1905.

SAMUEL RANDEL, 72 years old, a dentist of New York City, died Feb. 22, 1905.

F. S. SOUTHWICK, 53 years old, a dentist at Rochester, N. Y., died Feb. 24, 1905.

H. T. SMITH, a dentist at Bridgeman, Mich., was killed by a train Jan. 10, 1905.

R. S. FELLOWS, a dentist at Newark Valley, N. Y., died Jan. 28, 1905, of cancer.

W. W. WILSON, 78 years old, a retired dentist at Baltimore, Md., died Feb. 2, 1905.

GEORGE F. LUCAS, a dentist at Oroville and Biggs, Cal., died Feb. 15, 1905, of tuberculosis.

J. M. KENNEDY, 30 years old, a dentist at Eldon, Ia., died Feb. 14, 1905, of heart failure.

J. T. IRWIN, 72 years old, a retired dentist at Cincinnati, O., died Feb. 21, 1905, of paralysis.

S. B. CORN, a dentist at Stillwater, Okla., died instantly from heart failure, Feb. 2, 1905.

N. W. PENCE, a dentist, committed suicide Feb. 21, 1905, at the Battle Creek Sanitarium.

W. L. ANDREWS, 64 years old, a dentist at Coldwater, Mich., died Feb. 12, 1905, of heart disease.

GEORGE W. CHEADLE, a dentist at Lebanon, Ore., was killed in the wreck of a building, Feb. 17, 1905.

FRANK E. MILLIKEN, 49 years old, a dentist at Oswego, N. Y., died Feb. 19, 1905, of Bright's disease.

L. N. DURHAM, 73 years old, a dentist at Asheville, N. C., died suddenly of heart failure, Jan. 23, 1905.

A. B. HARRYMAN, 65 years old, a retired dentist at Rising Sun, Ind., died Feb. 11, 1905, of heart failure.

BENJAMIN HAMMOND, 59 years old, a dentist at Winnipeg, Man., died Feb. 10, 1905, of heart disease.

G. B. MERSEREAU, 64 years old, a dentist of New York City, died suddenly Feb. 19, of heart failure.

ALEX. ELLIOTT, 70 years old, a retired dentist at Ellsworth, Pa., died suddenly of heart failure, Feb. 5, 1905.

W. K. HARLAN, 29 years old, a dentist at Danville, Ind., died Feb. 17, 1905, at San Antonio, Tex., of tuberculosis.

WIRE CUTTER.—Grind a notch in your plate shears near the joint and thus make a good wire cutter.—*Hints.*

BOILS.—"Oi t'ink the felly that sed a boil in the kittle is wort' two in the neck is all right. Yours trooly, Dooley."—*Judge.*

COPIES OF DIGEST WANTED.—We will pay twenty-five cents apiece for a few copies of the DIGEST for September, 1903, if in good condition.

CORROSION OF SILVER PLATES.—Silver plates boiled in a solution of cream of tartar and salt will not corrode when placed in the mouth.—*Gazette.*

FAT.—The manufacturer of obesity remedies lives on the fat of the land.—*Philadelphia Record.*

A CONGRESS EXPERIENCE.—"For downright cold-blooded frigidity I commend the dental profession, generally speaking."—DR. J. B. CHAFFEE, *Western.*

GAGGING.—To prevent gagging bathe the roof of the mouth with a menthol solution applied on a pledget of cotton before inserting the impression tray.—*Summary.*

AID TO THE SALIVA EJECTOR.—A small piece of wet, antiseptic gauze placed over end of the saliva ejector will prevent the tissues from being drawn in.—*E. C. Kroeck, in Brief.*

SENSITIVE DENTIN.—For sensitive places at the gingival margins rub with a soft stick of wood dipped in a solution of tannin in glycerin. A specific.—DR. HOWLAND, *International.*

J. M. WRIGHT, a dentist at Seville, O., fell from the stairway of a burning building Jan. 21, and broke both arms, a leg and suffered internal injuries which, it is feared, will prove fatal.

R. A. WASSON, a dentist at Ottawa, Kan., died Feb. 26, 1905, after a three days' illness. He was prominent in the dental affairs of his state, and always active in every movement for the betterment of his profession.

TO POLISH VULCANITE.—Use aqua ammonia to mix the whiting with instead of water, and the result will be very satisfactory. After polishing wash in tepid water and finish with clean buff wheel.—W. J. ROBINSON, *Stomatologist.*

TEXAS DENTAL COLLEGE.—Feb. 13, the Texas Dental College of Houston was chartered with a capital stock of $10,000. The incorporators are O. F. Gambati, T. P. Williams, C. H. Edge, M. J. Lossing, E. M. Armstrong and others.

LESTER NOBLE, 86 years old, a retired dentist at Longmeadow, Mass., died Feb. 21, 1905. It was his testimony concerning the artificial teeth and gold plate found in the ashes that convicted Prof. Webster of the murder of Dr. Parkman in 1849.

JAMES LESLIE, 86 years old, died at Cincinnati, O., Feb. 8, 1905. During his lifetime he was prominent in dentistry, in the manufacture of dental supplies, and for many years was president of the Ohio Mechanics' Institute.

HIS LAST WORDS.—"Have you any message to leave?" asked the nurse, bending over him. "Is there any last word you wish to give to the world?" "Yes," replied the dying man. "Please say for me that the doctors were mistaken. The operation was not successful."

RUST REMOVED FROM INSTRUMENTS.—Place them overnight in a saturated solution of zinc chloride. The rust will disappear through reduction. Rinse in hot water, place in a hot soap and soda solution, and dry. Polish with absolute alcohol and chalk.—*Pacific Med. Record.*

NEXT TO IT.—Dinwit—"Say, our backbones are like serial stories, aren't they?"

Thinwit—"Prove it."

Dinwit—"Continued in our necks."—*Harvard Lampoon.*

PROPERLY THANKFUL.—An old lady came into the office of Dr. M. C. Smith of Lynn, Mass., a few days ago and had a tooth extracted. After it was out she began to "thank the good Lord." The assistant suggested that she thank the Doctor—"Sure, and I have paid him."

DENTIST PROBABLY A MURDERER.—Feb. 14, W. R. Labelle, a dentist of Holyoke, Mass., shot his wife and her grandmother and beat his mother-in-law over the head with a clubbed revolver. The grandmother is not expected to live, and the injuries of the other two women are serious. Labelle was captured.

INDIANA DENTAL COLLEGE SUES TREASURER.—Dr. Harry S. Hicks was removed from office as treasurer of the Indiana Dental College Feb. 17, and on Feb. 21 was made defendant in a suit filed against him in the Superior Court, in which he is charged with having misappropriated about $20,000 belonging to the College.

MORPHIN FIEND BLAMES DENTIST.—This month a young man of good family was arrested in Paterson, N. J., for stealing a woman's purse. When on trial he said he wanted the money to buy morphin, to the use of which he had been addicted ever since a dentist administered it to him three years ago to stop pain.

A NON-FLAMMABLE CELLULOID.—A celluloid which takes fire with great difficulty may be prepared by mixing a suitable quantity of one of the alkyl esters of silicic acid, such as anyl or ethyl silicate, with the nitro-cellulose and camphor solution. A French patent has been taken out to protect this combination.—*Chemist and Druggist.*

TO SOFTEN BEESWAX FOR IMPRESSIONS.—Place the wax in *warm* water of a temperature of about 140° Fahrenheit (60° Centigrade) and let it remain until it is fairly soft, then remove it and wave it over a Bunsen or a spirit flame until it is sufficiently plastic for use. Any attempt to hasten the process of softening by the employment of *hot* water will lead to trouble.—C. A. & S., *Circular.*

LUPUS TREATED BY LOCAL APPLICATIONS OF TURPENTINE.—During the past year Hoy has treated several cases of lupus with local applications of turpentine. Picric acid gauze or cotton was employed to keep the ulcer moistened with the turpentine. The lesions healed rapidly and satisfactorily in every case and have not recurred.—*Thera. Gaz.*

PULP REMOVAL.—It is my conviction that there is often more probability of trouble in the disturbance of tissues at the apex by instruments or chemicals than if a small portion of pulp has been left undisturbed. Tissues once impaired by traumatism are never again so resistant to infection as they were originally.—A. E. WEBSTER, *Cosmos.*

GOLD TEETH FOR THE MASSES.—Dr. F. V. Williams of Central City, Neb., sends us the advertisement of a concern which is selling at ten cents each "a gold-plated shell that fits any tooth, and looks like regular dentist's work." Now negroes and flashy women won't be dependent on the advertising dental parlors for the means wherewith to attract attention.

RETENTION OF DENTURES.—If possible a mouth should not be rendered edentulous, but in each jaw two roots should be left and utilized to support the plate. A satisfactory method is to fit each root so left with a gold cap and tube into which fit a pin attached to the plate. The stability which even one root so treated will give to an entire denture is surprising.—WM. M. GABRIEL, *Record.*

CEMENT-AMALGAM COMBINATION.—The best way of using cement in combination with amalgam is to press the cement in with amalgam, by which it acquires a close apposition and stronger adhesion to the tooth than when the cement is put in alone, being driven in under greater compression and not pulled away again by adhesion to the instrument.—HARRY BALDWIN, *Brit. Dent. Jour.*

TREATMENT OF THE PATIENT.—The dentist is too apt to center attention on the tooth, regarding the patient as a rather tiresome appendage, a necessary nuisance. All treatment should be planned with due regard to the age, state of health and power of endurance of the patient, and carried through with the infliction of the least possible amount of discomfort or distress.—J. H. BADCOCK, *Record.*

BANKRUPTS.—This month, Chas. H. Wambold, now working for the Gordon G. Martin advertising dental concern, declared bankruptcy.—Feb. 4, a petition in bankruptcy was filed against the Western Dental Supply Co., E. W. Allendorph, president, of Kansas City.—Feb. 3, F. W. Warren, a dentist of Galveston, Tex., filed a petition in bankruptcy, giving his liabilities at $1,184, and his assets at $384.

VULCANIZING ON TIN.—Instead of covering the model with tinfoil I make, when it is possible, a tin model, preferably a tin shell, which has the advantage of being readily removed from the plate. A peculiarity which I cannot explain is that rubber when vulcanized on tin is totally different from rubber vulcanized in contact with plaster. It seems to lose its weight almost one-half.—R. H. NONES, *International.*

ORTHODONTIA: SPREADING THE MAXILLÆ.—In very young patients, before the cuspids and bicuspids have come in—at seven or eight year of age—by spreading the maxillæ the unerupted cuspids and bicuspids are moved while still embedded in the bones, and will come in in perfect alignment, straighter and more firmly fixed in their sockets than if forced into occlusion after eruption.—R. OTTOLENGUI, *Items.*

SAVED BY SCIENCE.—

The horseless, and wireless, and chainless fad
Has brought us a cure for our deepest hurt;
For it's put out of fashion the sexless cad
Who rode a bike with a skirtless skirt.—

Winthrop Packard.

DENTIST ARRESTED FOR FRAUD.—J. H. Bennett, a young dentist in Philadelphia, was held in $1,000 bail for trial Feb. 15, on the charge of conducting a fraudulent employment agency. He is alleged to have swindled a number of persons by obtaining money from them for prospective positions which never materialized. He was arrested in October, 1903, for passing worthless checks and served a short term of imprisonment.

LOCAL ANESTHESIA IN ANTERIOR-SUPERIOR TEETH.—One of Mulford's tablets, each of which contains one one-hundredth grain adrenalin plus one-quarter grain cocain, dissolves readily in a quarter teaspoon of hot boiled water. Saturate in this a plug of cotton and place in the nostril over the roots of teeth to be operated upon. Complete anesthesia results, permitting painless extraction or cavity preparation.—FRANK W. LOW, *D. O. & Lab.*

FATALITIES.—Jan. 29, a politician of Chicago died from blood-poisoning, and his relatives claim it was due to the unskillful cleaning and treatment of his teeth by a local dentist.—This month a middle-aged woman in Buffalo went to a dentist to take gas and have some teeth extracted, but she became unconscious soon after taking the chair, and before the gas was administered, dying in a few minutes.—Feb. 13, a man, 51 years old, died at Wooster, O., from hemorrhage, following the extraction of several teeth.

EXAMINING BOARD AFFAIRS.—At the January meeting of the North Dakota Board six out of ten applicants were successful in passing the examination.—The Washington State Board has been waging war on the illegal practitioners of the state, and has cleaned up things pretty thoroughly. The proprietor of a dental parlor failed to pass the board examination, and so brought suit against the board. The matter was carried to the Supreme Court of the state, and on Feb. 18 it handed down the opinion that, while every man actually practising dentistry must have a license from the state board, the man owning or managing a dental business need not necessarily be licensed.

TO REMOVE A CEMENTED CROWN-POST FROM A ROOT.—H. B. Tileston, Louisville, in *Summary.* With a tiny pointed drill made from an old round bur No. ½, drill along one side of the post to as near the end of it as possible, selecting the side with the greatest amount of dentin between the post and the periphery of the root, usually the labial or lingual aspect, to avoid any danger

of perforation. Now with a spiral broach inserted into the drill hole, literally saw the cement from around the post, thus releasing it. The best form of broach is the one with a little ball of metal for a handle. It is stiff, and the ball being close to the spiral lateral pressure is more effective than in those with a longer butt.

MARRIAGES.—Emerson Currie, a dentist at Plainfield, N. J., was married to Miss Winnie Sellery of Dundas, Ontario, Feb. 18.—Chas. L. Johnson, a dentist of Pittsfield, Mass., was married to Miss Ellen N. Nivason of Dalton, Mass., Feb. 9.—Laurence L. Mulcahy, a dentist of Rochester, N. Y., was married to Miss M. Louise Freidley of Batavia, N. Y., Feb. 8.—W. P. Murray, a dentist of Cincinnati, was married to Miss Matilda Momberg of Cincinnati, Jan. 26.—O. B. Powell, a dentist of Paducah, Ky., was married to Miss Irene Straussman of Paducah, Feb. 14.—David A. Segrest, a dentist of Woodville, Tex., was married to Miss Minerva Bernard of Corpus Christi, Tex., Jan. 26.

ADENOID OPERATIONS AND MORTALITY.—Not long since I was asked to see a case in consultation in which purulent meningitis had developed after an operation for adenoids. The termination of the case was of course fatal. It seems probable that there are many more fatalities after adenoid operations than are reported, or than there are usually considered to be. Some time ago I saw a similar case in a young adult of twenty years, suffering from a typical acute infectious meningitis after operation. It seems not unlikely that in these cases the removal of the lymphatic tissue leaves lymph-passages open for the absorption of infectious material of various kinds, which, owing to conditions, is practically always present in the throat.—*Medical News.*

RESTORING MOUTH INJURED BY AIR-CHAMBERS.—When the roof of the mouth had been ruined by having the tissues drawn down, Dr. Atkinson made a rubber plate to accurately fit the parts. The hypertrophied parts were painted with a saturated solution of salicylic acid in alcohol. That was done once daily for three or four days, then some plaster was put in the plate, and the latter put in the mouth. That was continued from time to time, the plaster cores being changed at each setting, increasing in thickness until the roof of the mouth was gradually reduced to its proper condition. I remember one case he showed me where he had reduced nearly half an inch of hypertrophied tissue by that means in the course of a few weeks.—R. OTTOLENGUI, *Items.*

DIVORCES.—Mary A. Brown recently sued her husband, Calvin B. Brown, a dentist of San Francisco, for divorce on the ground of neglect, but when the case came to trial Feb. 6 the complaint was dismissed and a decree awarded to the husband on a charge of desertion.—Last month two dentists were haled into court to show cause why they should not be committed for contempt of court in failing to pay alimony for several months. One was Dr. I. De Johns of Cincinnati and the other was Dr. T. S. Higgins of San Francisco, whose wife was granted a divorce from him Jan. 18 on a charge of infidelity.—Chas. C. Limbarth, a dentist of Brooklyn, has been sued for $50,000 damages for alienation of the affections of another man's wife, and

has been named as corespondent in a suit for absolute divorce.—Peter P. Lobig, employed in a St. Louis dental parlor, has been sued for divorce by his wife, who alleges that when he was a barber she helped earn money to send him to dental college, and that now he has deserted her.—H. La Mott Sanford, a dentist of Syracuse, N. Y., has been sued for divorce by his wife on the ground of cruelty.—Grant Vinnich, a dentist at Springfield, O., was recently sued for divorce by his wife on the charge of cruelty, and Feb. 4 she obtained a decree.

New Way of Collecting Bill.—Last month a man went to a dentist in New York City and had made a plate carrying seven teeth. After the work was finished and the plate was in his mouth he told the dentist who he was and reminded him of an unpaid bill for dental supplies which was contracted some years before. The dentist demanded pay for the work, and a scuffle ensued, the dentist endeavoring to take the plate out of the man's mouth, and the other breathing hard through his nose, and giving him no opportunity to do so. A policeman appeared on the scene and took the patient to the station. The magistrate told the man he had no right to obtain dental work under a false name or adopt such a method of collecting a bill. He was held in $500 bail on a charge of larceny.

Non-Syphilitic Perforation of Septum.—Felix (*N. Y. Med. Jour.*) notes the importance of understanding all causes of perforation, because specific treatment might be begun and continued for years without benefit. Among other causes are—Simple ulcer, which never attacks bone; occupation ulcerations—occurring in workers in cement, in chromium salts, alizarin, or Swedish matches—which may involve bone. Perforation is common also in cobalt miners and wherever arsenic is used in manufacturing, also in factories of glass, paper, dextrin, sodium carbonate, and hydrochloric acid. Other causes are atrophic rhinitis, traumatism, perichondritis, and foreign bodies. Perforation may also complicate typhoid fever, diphtheria, smallpox, tuberculosis, lupus, leprosy, glanders, rhinoscleroma, sarcoma, adenoids, dental cyst, Bright's disease, and tabes dorsalis. Other proof than mere perforation is therefore required to establish a diagnosis of syphilis.

Accidents.—A few days ago a dentist in Iowa took a swallow of ammonia, mistaking it for a mouthwash. His mouth was badly burned, but he is recovering.—Feb. 21, a dentist's assistant at Haverhill, Mass., was almost killed by inhaling chloroform, to see what the effects of the drug were like.—Feb. 22, a dentist at Malden, Mass., had his eyes injured while baking porcelain.—J. F. Mullins, a dentist at Great Barrington, Mass., was seriously injured in a railroad accident Feb. 8.—Feb. 26, a young girl in Boston bought creosote at a drug store to relieve a toothache. She did not heed the directions on the bottle, but kept increasing the application until she was in a serious condition and had to be taken to a hospital.—Chas. A. Niehaus, the sculptor of Cincinnati, swallowed a plate carrying three false teeth, Feb. 27, and his physicians are trying to locate it with the X-ray, but up to date have not succeeded.—Feb. 6, the vulcanizer in the office of a dentist at Waynesboro, Pa., exploded and caused considerable damage.

OPERATION FOR CONGENITAL SADDLE-NOSE BY THE INTRODUCTION OF A CELLULOID PLATE.—Wiener (*Medical Record*) reports a case of saddle-nose in which he dissected up the skin and introduced a celluloid plate molded to the proper shape. There was some redness and swelling for the space of ten days, but the ultimate result was so satisfactory that he recommends the procedure for trial.

LACTATE OF BETA-EUCAIN.—Katz and Langgaard report (*Therap. Monatshefte*, August, 1904) on a new salt of beta-eucain, the lactate. It has the same properties as beta-eucain hydrochlorate, i. e., it is non-toxic, non-irritant and sterilizable by boiling, and possesses the further advantage of being 22 per cent water-soluble. In 10 to 15 per cent solutions the lactate is especially adapted for anesthetizing mucous membranes; when local ischemia is desired it can be combined with suprarenal preparations. For ordinary dental surgery the hydrochlorate, which is about 3½ per cent water soluble, amply suffices.

ANKYLOSIS OF THE MANDIBLE; OPERATIVE TREATMENT.—Kusnetski (*Centralblatt für Chirurgic*) reports two cases of ankylosis of the mandible in which he removed a section of bone one centimeter in length from the middle of the ascending ramus and implanted a muscular flap from the masseter muscle between the ends of the resected bone. The first patient was a seven-year-old child in whom ankylosis developed four years previously, after an attack of scarlet fever and otitis media; the second patient was a woman thirty years old in whom ankylosis developed after an attack of typhoid fever, complicated by inflammation of the joint twenty years previously. After operation the child could open his mouth to an extent of 1.75 centimeters, and the woman to 2.5 centimeters. These two cases, taken in conjunction with ten reported by Schmidt, prove the usefulness of this method.

SUPPLEMENTARY MEASURES AFTER REMOVAL OF ADENOIDS.—Friberg (*Arch. of Pediatrics*) calls our attention to the lack of supplementary treatment following operations for adenoids. To this carelessness on the part of the profession are due the poor results obtained from this operation. The removal of the adenoids does away with the obstruction, but the nasal breathing can be established only by the proper training of the child. After nasal breathing is established during the waking hours the mouth-breathing will not exist during sleep. He advocates the encouragement of the gum-chewing habit for a time, as this will assist in keeping the mouth closed. He also recommends a wooden splint to keep the mouth shut during sleep. The second step of the treatment is directed to the proper correction of any dental deformity which may exist.

SULPHUR AND MOLASSES.—Two young fellows at "Tech" had got "off their feed," whereupon Aunt Addie, who had been prevailed upon to look after their physical needs during the school year, prescribed forthwith the time-honored family remedy, sulphur and molasses. At the end of a week their dough-like complexion had given way to the rosy hue of healthful youth, and, like Cy Prime in the "Old Homestead," they became coltish. Observing the fulness of the change in their appearance and conduct, Auntie

inquired if the mixture had had the desired effect. "Don't know," said one, "whether it had or not; it put us both 'on the bum,' just the same." After a moment or two of deep meditation, and a like period that may have been devoted to prayer, the good lady quietly observed: "That's what sulphur and molasses is for." "Te-he," came in concert, and both stepped softly from the room.—*D. O. & Lab.*

NEW METHOD OF TAKING IMPRESSIONS.—Shown by L. L. Poston, Council Bluffs, Iowa, before the Nebraska State Dental Society, May, 1904. I have used a method of combining plaster of Paris and wax to good advantage in a great many cases. First, take a plaster impression, dry with a napkin, and warm slowly with blowpipe. When hot enough to melt beeswax on, run a layer or glaze all over the inside. Melt it into the plaster in the center of the palatal portion and leave a thicker layer at the posterior margin and on the inside of the labial-buccal flange. While yet warm as patient can bear it, insert and press *firmly* to place. When cool remove. You now should have as tight-fitting an impression as the mouth will stand. This should be poured without painting, as the wax will not adhere to the cast. The cast will not need scraping. If a good plaster impression is to be considered as the proper thing to tie to, then all the wax you can get to stay on the inside of the flange and across the posterior part of the palatal portion should be considered, to make the impression just that much better or tighter fitting. In other words, you bring the pressure to bear on the places where desired by placing of wax instead of scraping the cast, which is a very unscientific procedure. I will admit that the wax will not always do just as you would like to have it, but it is an easy matter to rewarm it and try again.

REQUIREMENTS TO PRACTICE DENTISTRY IN THE VARIOUS STATES.—In the following states and territories a dentist must have a diploma from a recognized dental college and also pass the state board examination: Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Maine, Mississippi, Montana, New York, New Hampshire, New Jersey, New Mexico, Ohio, Pennsylvania, Rhode Island, South Carolina, Vermont, Virginia, Washington, West Virginia, Wyoming. In the following states a diploma from a recognized dental college will permit one to practice dentistry without taking the board examination, but a license must be secured from the proper authorities: Kansas, Kentucky, Michigan, Missouri, Nebraska, Nevada, North Carolina, North Dakota, Oklahoma, South Dakota, Tennessee, Texas, Utah. In the state of Wisconsin a license is granted to those who have a diploma from a dental college demanding a four-year course of seven months each. In Missouri, South Dakota and Utah a board examination is granted to any person who has served a certain number of years under a private preceptor. If the examination proves satisfactory a license is granted, the same as if the applicant possessed a college diploma. In the following states any person desiring to practice dentistry may take the board examination, and a license will be granted if the examination proves successful: Alaska, Kansas, Massachusetts, Nevada, Oklahoma, Tennessee, Texas.—*Brief.*

ILLEGAL PRACTITIONERS.—Feb. 14, a dentist at Mountain View, Cal., was arrested for practising dentistry without a license. He has been there for six years.—Feb. 14, an operator in a dental parlor at Springfield, Mass., was cleared of the charge of practising dentistry without a license, as he exhibited the board certificate, but the manager of the parlor was found guilty of practising dentistry illegally and was fined $50.—Last month a man at Attleboro, Mass., was fined $75 for practising dentistry without a certificate from the board. The manager of the dental parlor where he worked, who appeared in court to defend him, was arrested for violating the dental statutes, as, in trying to clear his employe, he made several admissions damaging to himself.—Jan. 25, a dentist from North Carolina was arrested at Appomattox, Va., for practising dentistry without a license, and was fined $50.

FIRES.—T. E. Strong, Fresno, Cal., Feb. 9, loss $500, fully insured.—M. Kenney, Tillsonburg, Ontario, Feb. 15, loss $600, partly insured.—H. C. McMullen, Cambridge, Ill., Feb. 2, loss $800, no insurance.—E. S. Hodgson, E. St. Louis, Ill., Feb. 3, loss $400.—J. C. Calhoun, Birmingham, Ia., Feb. 6, loss $500, no insurance.—Julius Miller, Manning, Ia., Feb. 7, loss $300.—D. L. Proctor, Mt. Sterling, Ky., Jan. 26, loss $1,500, insurance $500.—Excelsior Dental Laboratory, New Orleans, Feb. 19, total loss.—L. D. Archinard, New Orleans, Feb. 19, total loss.—R. A. Holliday, New Orleans, Feb. 19, total loss.—J. H. Jackson, Beverly, Mass., Feb. 25, loss $200, fully insured.—Boston Dental Co., Fall River, Mass., Jan. 28, loss $100, fully insured.—W. F. Malley, Adams, Mass., Feb. 11, total loss.—S. H. Voyles, St. Louis, Feb. 15, loss $100.—Chas. Hosmer, Beaver Falls, Pa., Feb. 25, loss $1,000, insurance $800.—A. L. Swift, Edinboro, Pa., Feb. 16, total loss, partly insured.—P. D. Houston, Lewisburg, Tenn., Feb. 14, loss $100, fully insured.—G. H. Kincaid, Austin, Tex., Feb. 23, loss $800, insurance, $300.—R. L. Morgan, Big Sandy, Tex., Feb. 24, loss $400, no insurance.—George Wilson, Marble Falls, Tex., Feb. 13, loss $500, no insurance.—Thomas Johnson, Wausau, Wis., Feb. 1, loss $500.—J. W. Gage, Denver, Feb. 19, total loss.—New York Dental Parlors, Denver, Feb. 19, total loss.

"FOR GOD'S SAKE."—Whether a growing tendency, or merely a spurt in that direction, may be a question, but the number of speeches of late in dental meetings in which the name of God has been taken in "vain" and other styles is simply appalling. The man who falls short in his own estimation of impressing his hearers becomes pathetic in his appeals, and forthwith begs them "for God's sake do it," or "in the name of God give them the benefit of it." Now, this is cant, and, as used by the would-be impressive speaker, speeds rapidly into rant, and as such not only fails of its purpose, but actually turns the mental stomach of everyone present—always excepting the speaker, who, having fed indefinitely on this kind of pap, has been rendered immune. Cocain, cataphoresis, pressure anesthesia, etc., are not used "for God's sake," nor are they used except by the alleged devout "in the name of God." These things are for the physical, mental and moral comfort of the patient in the chair, also for the reputation and profit of

the good man over against the chair. God is not concerned in the operation at all, and the man who is "awfully in earnest" would do well to get this into his head and keep it there, especially during the heat of debate. Cant phrases and rant methods make poor wind with which to pilot skyward into the affections of one's hearers.—*D. O. & Lab.*

THUMB SUCKING—HORSE-SENSE TREATMENT.—Not long since Dr. J. W. Cowan of Geneseo, N. Y., had thrust upon him, in less than three minutes, more practical information on the treatment of thumb-sucking than books hitherto published have succeeded in compassing within a hundred pages. It came about through a couple of calls from an old German woman, the first of which had for its object relief from pain in or about a tooth or two. She was soon made comfortable, and the Doctor, knowing she could ill afford to pay what the service was worth, and unwilling to make a precedent by charging her less, undertook to dismiss her. This, however, was not to the old dame's liking; to "danks," she added, "I bring you some broons." The doctor, however, didn't know that he had any use just then for "brooms," but if it pleased her she might bring him some. A few days later she called again, but not with a stock of brooms, as the doctor had expected, but a market basket of *prunes,* such as only Livingston county can produce. While waiting to make herself and her errand known she became interested in a child accompanied by his mother, whom the doctor had just treated and was about to dismiss. When both had gone she asked: "Vat's the matter of the little poy?" "He has crooked teeth; I'm making them straight." "How he got it?" "Sucking his thumb." "So! My little poy, he have that; I sthop it." "You did? How?" "I sew a sthick by the sleeve of his night shirt; ven he makes his tum by his mouth it goes by his ear on the utter side." Dr. Cowan is a wiser man than before the Congress, and (if that were possible) a better one.—*D. O. & Lab.*

DAMAGE SUITS.—W. A. Winters, a dentist of Newcastle, Ind., recently sued a young physician for $3,000 damages for libel. Other dentists and physicians took a hand in the matter, and the suit has been satisfactorily compromised.—A dentist in Boston this month brought suit against the dentist whose practice he bought, claiming that the latter had agreed not to open up again in that city. The court, however, refused to interfere.—E. W. Allendorph, a dental supply dealer of Kansas City, who recently failed in business, was arraigned in the Criminal Court, Feb. 15, on a charge preferred by a dental manufacturer that the goods for which he failed to pay were not sold outright to him, but merely consigned. Allendorph denies the claim.—Feb. 1, a firm of dentists in Elmira, N. Y., won a suit brought against a patient for money due for professional services. The patient claimed that the work was not satisfactory, and filed a counter-claim for $300 damages, but the court found for the dentists.—Feb. 17, a dentist at Columbus brought suit against a patient for an unpaid dental bill, and the patient filed a counter-claim for $100 damages, alleging that the dentist broke one of his teeth and injured his jaw.—Feb. 11, a dentist at Columbus, O., was sued for $5,000 damages by a woman, who alleges that

in attempting to fix her teeth he aggravated the trouble and marred her beauty.—Last month a dentist in Johnstown, Pa., took a plate out of a woman's mouth when she declined to pay for same. She had him arrested on a charge of assault, and the case was settled by his paying the costs.—Last month a druggist in Philadelphia was sued by a man who alleged that when he went to a dentist's office to have an aching tooth removed the druggist represented himself as a dentist and pulled three teeth instead of one. The druggist claims that when he was attempting to extract the aching tooth the patient swung his arms about wildly, striking the druggist's arm, which caused the forceps to slip and knock out the two sound teeth. That is a fine tangle for some jury of farmers.

ROBBERIES.—A. J. Powell, Haywards, Cal., Feb. 14, $80.—Jan. 27, a dental salesman had his grip full of dental goods stolen at Waterbury, Conn., by two Italian boys. The police recovered the goods and arrested both the boys and an Italian who had bought the stolen property from them.—Gamron & Maddock, Chicago, March 2, $150.—J. B. & C. H. Harmon, Des Moines, Ia., Jan. 21, $200.—Feb. 9, a sneak thief stole a small sum of money from the office of Dr. J. C. Crowley at North Adams, Mass., and was arrested a few hours later.—P. Phillips, Salem, Mass., Feb. 9, $10. The thief failed to open an unlocked safe, with a considerable amount of gold in it.—F. E. Rice, Salem, Mass., Feb. 9, $5. Here, also, the thief overlooked considerable gold.—C. W. Putnam, Amesbury, Mass., Feb. 11, $70.—John Ryan, Amesbury, Mass., Feb. 11, $5.—Feb. 18, the offices of Drs. Reilly, Clements and Cook at Haverhill, Mass., were robbed of gold and materials.—G. B. Gibson, Westborough, Mass., Jan. 22, $30.—Feb. 21, a man was arrested at Newburyport, Mass., with a quantity of false teeth and scrap gold in his possession. It is thought that he is responsible for the numerous robberies which have occurred of late in that section.—J. B. Stevens, Elizabeth, N. J., Jan. 28, $15.—Feb. 18, the offices of Drs. H. L. Belcher, J. P. Collins, A. G. Bullock, C. L. Barrows, W. W. McElroy and S. E. McDougall, in Buffalo, were robbed of scrap gold and materials.—A. J. Hecker, New York City, Feb. 18, $20. Dr. Hecker has considerable artistic ability, and the face of the thief so impressed him that he made a sketch of it from memory immediately after the robbery, and it is thought that same will aid in the arrest of the thief. The latter is described as a slender, smooth-faced individual with a German accent. His plan is to visit the offices of dentists and physicians and ask permission to wait for his mother, "who is coming to have some work done." So soon as the owner leaves the office for a moment he takes what he can and escapes.—Jan. 26, a masked robber held up the porter in a dental parlor in New York City with a revolver, and, after rifling the office and taking what the porter had in his pockets, he made his escape.—Joseph Erwin, Bethlehem, Pa., Feb. 1, $35.—Several dental offices in Easton and other Pennsylvania towns have been robbed this month.—Jan. 22, a negro was arrested in Memphis, Tenn., and was identified as the man who robbed the office of a dental parlor in that city some days before and threw acid on a woman clerk who interrupted his work.